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Stove and Greenhouse Flowering Plants.

ANTHURIUM SCHERZERIANUM. *Schott.*

CHOICE

STOVE AND GREENHOUSE FLOWERING PLANTS,

COMPRISING

Descriptions of upwards of Eleven Hundred Species and Varieties,

ACCOMPANIED BY

INSTRUCTIONS FOR THEIR CULTIVATION AND MODE OF MANAGEMENT.

BY

BENJAMIN SAMUEL WILLIAMS, F.R.H.S.,

Member of the Imperial Horticultural Society of St. Petersburgh;

AUTHOR OF "THE ORCHID GROWER'S MANUAL," "HINTS ON THE CULTIVATION OF FERNS," "SELECT FERNS AND LYCOPODS," "CHOICE STOVE AND GREENHOUSE ORNAMENTAL-LEAVED PLANTS," ETC., ETC.

WITH

COLOURED FRONTISPIECE,

BY

J. N. FITCH.

SECOND EDITION, ENLARGED, ILLUSTRATED, AND REVISED.

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PREFACE.

THE present volume is intended principally for the use of amateur horticulturists and young gardeners, and has been prepared in consequence of the numerous requests which have been made to me to write something upon the cultivation of Stove and Greenhouse Plants. The success which my "Orchid Manual" and "Select Ferns and Lycopods" have met with, leads me to hope that a practical work upon the cultivation of Flowering Plants, and Ornamental Foliage Plants, will meet with the approbation of the horticultural public, and become more particularly useful to the amateur, should his gardening tastes lead in this direction. These considerations, taken in conjunction with the fact that no such work exists, have induced me to prepare the present volume in the hope of supplying the want, which it is admitted exists. This volume, which is complete in itself, is confined exclusively to the description and the cultivation of a selection of plants remarkable for the beauty of their flowers. It will be followed by a volume of similar size and character, devoted to the now extensive and important class denominated Ornamental Foliage Plants. I have endeavoured to render the instructions which have been offered intelligible to all, and have recommended only those plants which are really good. This principle of selection *has, however, led* me to include many old

plants of sterling merit, which deserve attention, even in the most limited collections, and which have only been cast aside by those who have been contented with novelty, regardless of real and lasting beauty.

PREFACE TO SECOND EDITION.

THE first edition of this work has found a rapid sale, and has circulated widely, both in the Colonies and in the United States of America, independent of the home demand; this fact itself indicates the opinion of the horticultural public respecting its utility.

The frequent assurances, however, which I have received from amateurs and gardeners of the benefits they derive from the perusal of its pages, combined with the continued demand, has induced me to publish this, the Second Edition, and in doing so I have taken the opportunity to enumerate several species which were unfortunately overlooked, and also to add various kinds of sterling merit which have been introduced to this country and brought into commerce since the publication of the former edition, whilst, to render it more complete and interesting to amateurs (especially those who may have recently become converts to this delightful pursuit), a few illustrations of new or beautiful flowering plants have been added.

B. S. WILLIAMS.

VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON.
Feb., 1873.

CHOICE

STOVE AND GREENHOUSE PLANTS.

STOVE PLANTS.

INTRODUCTION.

IF the earliest races of mankind had possessed no love for plants, and had not been impressed by the grand and noble outlines of the trees of the forest, the importance of these vegetable monarchs would soon have become manifest through their yielding not only the necessaries of life, but, by the aid of attention and cultivation, supplying also its luxuries. Hence we find that, at a very early age, man was engaged in husbandry, and was busily occupied in cultivating the vine and the corn-producing plants, as well as trafficking in myrrh and spices. At the time the Greek Republic was in the zenith of its glory, a class of men called Rhizomatæ employed themselves in the digging of roots, and in searching for herbs, which were principally applied to the healing art. Aristotle first founded a natural science of plants, but his writings on this subject have been lost. He was followed by his pupil Theophrastus; and then for a long period we hear of no one prosecuting the study. The ancient Romans

seem to have cultivated a number of plants in their gardens and fields, but they never attained to any great degree of eminence in the science of cultivation. Dioscorides and Pliny were the first among the Romans to apply themselves to botanical study, but after their time it rapidly died out. We next find the Arabians occupying themselves in investigating the nature and qualities of plants, principally with the view to their application for medicinal purposes.

Passing over the dark ages, and coming down to the fifteenth century, we find that the study of plants again revived, and that the beauties of the vegetable kingdom were appreciated by men of high and low degree. In the sixteenth century one Otto Brunfels, of Strasburgh, published a treatise on plants, illustrated by wood engravings. From that time forward, the taste for plants went on steadily increasing until the time of Linnæus, whose philosophic writings gave a strong impetus to the delightful study. Since Linnæus's time the knowledge of plants has been vastly extended by the diligent labours and searching inquiries of men of great and active minds, both at home and abroad, of whom among those of our own country may be named Sir Joseph Banks, Sir James Smith, Sir William Hooker, Robert Brown, Sir Joseph Paxton, Dr. Lindley, Thomas Moore, John Smith, Dr. Hooker, &c., &c., men of whom any country might be proud, and with some of whom most plant-growers of the present day have been more or less intimately acquainted. Our continental neighbours can also boast of many equally great men, who have largely increased our knowledge of plants. Thus, in these days, not only may we gather delights from beholding the beautiful workings of nature in her vegetable garb, but we are also enabled to bring her boundless resources to bear practically upon our daily wants and luxuries.

Almost every portion of the earth is clothed with vegetation, each particular plant being adapted to the peculiar circumstances and conditions in which it is placed. Thus, the peat bog, the mountain, and the valley have each a distinct vegetation; the chalk, the gravel, the clay, and the swamp have each their own peculiar plants. As we ascend mountains, we find the temperature gradually becoming lower, and vegetation decreasing in stature, until the region of perpetual snow where no vegetation exists is reached. We do not intend, however, to enter in these pages upon the geographical distribution of plants, nor to investigate the means by which various genera have been placed in the positions they occupy, except so far as to point out, that as different genera and species in a wild state are subject to different conditions of atmosphere, both as regards moisture and temperature, as well as to varieties of soil, as to the physical and chemical qualities of the materials of which it is composed, it is only reasonable to insist that those who attempt the cultivation of plants, should have some knowledge of these matters, sufficient to enable them to imitate nature, so far as the artificial conditions with which they may have to deal will allow.

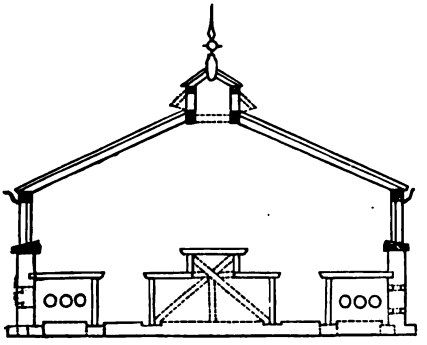
The first division of this work is devoted to Stove Plants, that is to say, plants requiring a considerable degree of artificial heat in our climate; they are plants whose home is in the tropics—in the regions of palms, tree ferns, gigantic bamboos, and monster trees whose magnitude would amaze us in this country, the branches of these arboreal giants being in many instances laden with epiphytal orchids, bromeliads, aroids, and ferns, as well as with parasitical plants, such as Loranthus, which, like our own mistletoe (*Viscum album*), derive their nourishment from the sap of their supporter. These parasites decorate the trees

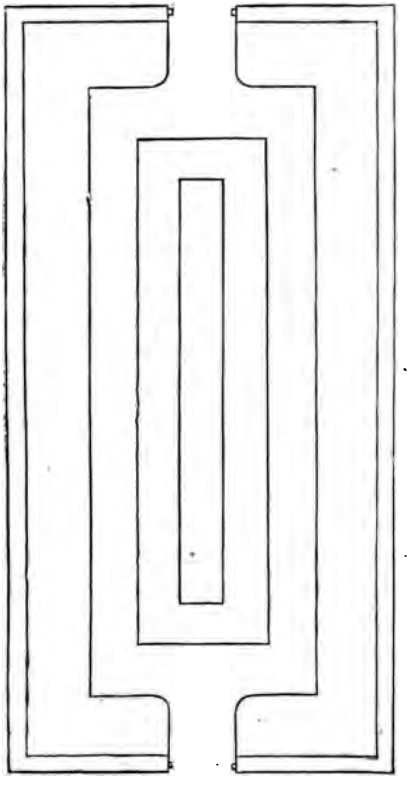
with an endless variety of gorgeous flowers, while, in addition, their branches are beautifully festooned with large climbing plants, such as are familiar to cultivators in the species of *Combretum*, *Passiflora*, *Cissus*, *Ipomæa*, *Bougainvillea*, *Bignonia*, and many others, which oftentimes reach from the ground to the very tops of their supporters, and hang across their branches like ropes to neighbouring trees, until the whole forms a tangled mass of splendid flowers and foliage utterly beyond the conception of those who have never seen a tropical forest. To collect and send home the riches of these tropical regions is a work of much cost, and is attended with great difficulties and danger, in the prosecution of which many highly intelligent and talented travellers have fallen victims either to the pestilential climate, the wild beasts of the country, or the treachery of, in many instances, the equally wild aborigines. To these men, who, by their arduous and self-sacrificing labours, have so largely increased our knowledge of the vegetable kingdom, all honour is due, and we cannot pass them in this place without recording our best thanks and highest praises for their services, and at the same time expressing our deep regret for their loss. To our leading nurserymen and amateur horticulturists again, both at home and on the continent, who have contributed funds so profusely to facilitate the introduction of nature's choicest gems to our gardens, the thanks of all plant lovers are due; these, we trust, will continue their good work. The editors of our numerous botanical and horticultural books and periodicals, moreover, deserve much praise for the spirited manner in which they lay these treasures before the public, both by means of beautifully executed drawings, and interesting and instructive essays. By this agency an interchange of thought and of practical

experience has been secured, with a result which is quite astonishing, so successfully is the cultivation of the immense number of species of plants which occupy our stoves and greenhouses carried on—results which certainly could not have been arrived at without co-operation of thought, brought about in the way we have just mentioned. A very great stimulus has also been given to the cultivation of plants by the liberal awards offered at the various horticultural exhibitions; and the vast improvement in the style of growth which has thus been brought about, and the numerous newly-introduced plants which are exhibited, show that no ordinary amount of skill and perseverance has been brought to bear upon the subject.

PLANT STOVES.

THERE are many forms of hothouse which may be employed successfully for the growth of Stove Plants, such as span-roofs, half-spans, and lean-to houses, but for the growth of specimen plants the span-roofed house is undoubtedly the best, as it affords the plants more light and air, at the same time that it may be made to form an ornament in a garden where no other style of house could be tolerated. Half span-roofed houses are very useful for growing small plants, for furnishing the side tables in the specimen house; and the lean-to has its special advantages, for the back wall will accommodate many plants, which, if trained against it, will display their beauties to greater advantage. In such houses, moreover, we may produce abundance of blooms for cutting, which will spare the choicer specimens from being mutilated or disfigured; and without some such structure, facilities of this kind could not be enjoyed.





We here give a ground plan and end section of a span-roofed house, suitable for the cultivation of specimen Stove Plants. It is fifty feet long, twenty feet wide, and twelve feet high, and contains a table next the outer wall, on each side and end, a walk three feet wide, and a centre table, which has a second table, one foot higher, running down its middle: these tables should be of slate, with iron supports, while the floor and path are best concreted with good Portland cement, mixed with sand, which makes a substantial and comfortable floor and pathway, and is easily kept clean, harbours no insects, and stands a great amount of wear and tear. The double or folding

doors are the best for such structures, because, if large plants have to be moved in and out, they afford greater space than the doors in ordinary use. While speaking of doors, it may be remarked that they should always be fixed so as to open inwards, which is more convenient, and, besides, the glass is not so liable to be broken through the violence of the wind. The side lights, or sashes, are two feet in height, and need not be made to open, but instead thereof, some large iron or slate ventilators should be built in the brickwork beneath them, opposite the hot-water pipes, as shown in the plan; by this means the air is prevented from blowing upon the plants in a raw or cold state. We also recommend that large drain pipes be laid in the ground, passing from the outside under the foundation to the inside of the house, and rising under the heating pipes, by which means fresh sweet air may be admitted, even in severe weather, if necessary, without detriment to the plants, which would not be the case unless it were warmed, as it would be in this case by rising amongst the hot pipes. The lantern-roof shown in the figure we consider the very best style of top ventilation for a Stove, because it does not let the cold air in directly upon the plants.

Some kinds of Stove Plants thrive much best with a little bottom heat; we allude to such as *Ixoras*, *Dipladenias*, &c., which must be grown in another house in which the centre stages, shown in the foregoing plan, must be replaced by a brick pit, in which the bottom heat can be supplied either by means of heated pipes, or a hot-water tank, or by its being filled with a body of tan or other fermenting material. Those plants which require this treatment must be removed from the growing house when in bloom, and, if in summer, may be brought into the

stove or conservatory. The lantern-roofed house may be objected to by some, on account of the additional expense of construction: if so, we must refer them to the ordinary span-roofed house, with sliding sashes, such as is shown in the woodcut at page 178. We must, however, add, in reference to this matter, that when valuable plants are being provided for, it is true economy to have the best accommodation provided at first, even though it may lead to a few pounds of additional expenditure.

HEATING.

PLANT stoves should be kept at a temperature ranging from 68° to 80° during summer, and from 60° to 70° during winter. Where the collection of plants is varied and extensive, it is well to have an intermediate house—that is, a house somewhat cooler than the one first indicated, but warmer than the ordinary greenhouse.

Premising that as yet nothing has been discovered to supersede, or even to equal, a good hot-water apparatus for heating plant houses, we hold that the first and most important point to decide upon is the character of the boiler. Hot-water boilers are now made of shapes and patterns without end, and as most cultivators have some predilection in this matter, we leave them to make their own selection. There are, however, many things to be thought of before deciding this question. If the locality is such as to render it impracticable to dig far down into the ground before reaching water, or to prevent a drain being

put below the boiler, then the upright tubular form of boilers is neither suitable nor safe; for, in cases of floods during winter, the water may rise and put out the fire, unless the stoke-hole is made watertight, which may be a troublesome and expensive process. We would, however, by no means depreciate these boilers, for where dēpth can be secured, and coke for fuel is within easy distance, we look upon them as being of first-class merit. Then we have cannon boilers, tubular boilers, common saddle-boilers, terminal saddle-boilers, and boilers that require no setting, the makers of all being able to give satisfactory reasons why the particular form they adopt is the very best extant. That we have this diversity amongst boilers is no doubt a great advantage, for one that may work admirably in one place may not, through some peculiarity of place or position, be so thoroughly satisfactory in another; and, again, the fuel most readily available, and which may suit one class of boiler, may not be so readily obtained in another place, and, therefore, those who are so situated will naturally have recourse to a boiler that will consume the fuel they have for feeding it with.

We have not thought it necessary to mention any other system of heating than the ordinary one with hot-water boiler and pipes, because no one builds smoke flues now; and the other systems which are adopted and spoken of in various works we have never tried, and, therefore, cannot speak of them practically.

Having selected the boiler, the pipes will be the next consideration. In regard to these, it is always true economy to have plenty of heating surface in the house—that is to say, a quantity which will give sufficient warmth with a moderate fire. Great waste of fuel, and much injury to the plants, result from being compelled to drive the boiler to

its utmost, through want of piping and not having a sufficient surface; while, on the other hand, by having a good command of heat, there is a vast saving in fuel, and a far more genial atmosphere can be maintained. As a result of these conditions, the plants will thrive far better, and the house be more enjoyable. On these grounds, therefore, it will be best to have four rows of piping—instead of three—round such a house as that here described; and this quantity will entirely obviate hard driving at any time. The boiler should be fixed outside the house, and entirely independent of it, for no matter how carefully the brickwork is built, it will become defective by constant wear, and then, through the escape of smoke and sulphureous gases, the ruin of many fine specimens may be brought about in a very short time. For jointing the pipes we have for many years used india-rubber rings, which are made specially for the sizes in which the pipes are cast, and we find that they answer well, as a joint can be made quickly, and very cheaply; it will last for many years, and if anything should go wrong with either the pipes or joints they can be separated easily, and without loss or expense through having to sacrifice one or more lengths of piping.

Many plant growers make a practice of steaming their houses regularly. This may sometimes be beneficial, but still the practice is open to objection, and if four rows of pipes are used, as before recommended, it need not be resorted to in order to increase the heat, while for any other purpose it is not necessary, for, by frequent applications of the syringe, and by pouring water upon the tables and floors, a sufficiently moist atmosphere can be maintained, without risk of any kind.

GLAZING.

EVERY few words upon this subject will suffice. The kind of glass we use is 21-oz. sheet glass, and we find it the most serviceable, as it is not easily broken, either by cleaning or by any ordinary usage. Nothing is gained by having the squares very small, but at the same time we dislike very large ones, as they are extremely liable to be broken in frosty weather. If the panes are about two feet six inches in length, and nine inches in breadth, they will have a very good appearance, the same width being used for the upright side sashes as for those on the roof.

VENTILATION.

GOOD ventilation is of the highest importance, for a constant renewal of air in plant houses is essential to the well-being of the occupants; indeed, where the necessary temperature can be maintained, we would never quite close the houses, day or night, except in severe weather. Let us, however, be properly understood upon this subject. By good ventilation, we mean always to avoid draughts and currents of cold air, these being most injurious to plants of all kinds. The adoption of the underground ventilators recommended in the construction of the house (page 7) will entirely obviate any ground of apprehension on this point; and if the sides of the ventilators in the lantern roof are covered with fine gauze wire or perforated zinc, evil will be most satisfactorily guarded

against. The use of the gauze or zinc will only be necessary during winter, as in the summer a greater volume of air may be admitted with advantage, and consequently the heated portion will require a readier means of exit. Stoves ventilated upon these principles will always have a fresh and healthy atmosphere—a condition which will not only impart strength and vigour to the plants, but will also, at the same time, be far more enjoyable to the amateur cultivator and the members of his family. Some persons may think we have attributed too much importance to this question of ventilation. We recommend those who entertain these views to observe closely the condition and appearance of plants in well-ventilated and in ill-ventilated stoves, and they will very soon acknowledge that we are correct in saying it is a point of vital importance.

SHADING.

THERE is a great want of some better material than we yet possess for shading plant structures—a material which shall possess sufficient strength, without being so thick as to cast too deep a gloom over the interior of the house. We are extremely sorry that all attempts to supply the want have up to the present time proved fruitless. The best material we can recommend is canvas, which on one side must be made fast to a strong roller, and on the other must be nailed to a lath fixed lengthwise near the top of the sashes. In mounting the blinds care must be taken that they are quite equal in breadth throughout, or the roller will not run regular. A narrow covering should be fixed along the ridge of the house,

under which the blind may rest when not in use, in order to protect it from wet. The blinds and rollers may be taken down during winter, as little or no shade will be required during that period; and if they are looked to after damp weather, and in winter thoroughly dried and stored away in a dry shed, they will last for several years. Some cultivators, however, like to use them as a protection in winter on frosty nights, as recommended in our *Orchid Manual;* and when this is done, they must be rolled up at daybreak, so that no light may be excluded from the plants during the short winter days.

Blinds for the sides can be made of canvas or tiffany; we use and prefer the latter. The strips should have rings sewed to them on both edges, to fasten on hooks, fixed in the house at corresponding distances. This fixing is necessary to prevent the wind blowing the blind on one side, and thus exposing any part of the interior to the sun's influence in an unguarded moment.

CISTERNS.

HESE are very necessary in all houses devoted to plant growing, as the rain water, which may then be collected from the roofs, is the best that can be used. To have this water in a proper state for the plants, the cistern or tank must be inside the house, and so exposed that the water may become nearly of the same temperature as the atmosphere. Cold water applied to the roots of Stove Plants is most pernicious. Therefore, having fixed on the most convenient part of the house for the tank, build

up the sides from the floor, making the centre table the top, or sink it below the ground level. In the latter case, it would be desirable to have a pipe in connection with the boiler passing through it, for when stored below the surface the water will otherwise be much colder than the house. The best material for cisterns is slate, but brickwork, with a good coating of Portland cement, will answer the purpose equally well, and is perhaps to be preferred when they are placed below the ground level.

SOIL.

AS before stated, different plants affect different soils, and therefore the cultivator must endeavour to utilise the hints thus given to him, if he wishes to succeed in his labours. Hence the importance of making composts suitable to the requirements of the plants. To have this department under proper control, a place should be set apart in some convenient quarter of the garden, for keeping a stock of the different kinds of earths, manures, &c., which are required, as well as a supply of pots. This is designated the compost yard. The various kinds of earth or soil should be neatly stacked up, in order that by age they may become mellow, and better adapted for the potting of tender plants than when newly dug. In selecting soils it must be remembered that the top spit is always preferable.

Loam.—This is of two kinds—light and heavy. The first is generally pale yellow in colour, but sometimes blackish; the latter is deep yellow, and feels somewhat greasy when

taken in the hand. These should be stacked separately, with the turf and living grass downwards, placing a layer of manure over every layer of loam of the heavy quality; in this way the manure will become thoroughly incorporated with it, and when cut out for use it will be found in a nice friable state: the light loam is best stacked by itself in a pure state. The quality of loam varies considerably in different parts of the country. We ourselves use a very good kind, which is obtained from Wanstead, Essex.

Peat.—This is also of two kinds. That which is composed principally of decayed mosses and woody materials, and is mostly used for burning, is not of much value for in-door plant growing, though some kinds of plants thrive well in it. The peat most serviceable for our purpose is composed of decayed vegetable matter, and contains a considerable amount of sand; it should be stacked with the top side downwards.

Leaf mould.—This is formed of thoroughly decomposed leaves which have been collected in autumn; these should be kept moist, and are best frequently turned over to facilitate decay. This kind of soil ought not to be used before it is two or three years old.

Manure.—A good heap of this should always be kept in the compost yard, so that none may be ever used which is not thoroughly decomposed.

Sand.—This should be kept under cover, and may be either white or brown. The white or silver sand procured at Reigate in Surrey is the best; next to this comes a white sand found in Bedfordshire, and after that sharp river sand.

These various kinds of soil being stored up in the compost yard, and fit for use, any of the mixtures recommended in the following pages can be made up for use, as required.

POTTING.

THE first things to be considered are the Pots. Of these, however, we need say but a few words, as every one is well acquainted with flower pots. For specimen Stove or Greenhouse Plants, the best pots are those with a movable bottom, because the plant can be set upon a stand, the pot gently slipped down, and the condition of its roots and drainage examined with the greatest ease to the operator, and perfect safety to the specimen. Next comes the drainage. On this subject very little will be said in the body of this work, not because it is of little consequence, for we hold it to be of the highest importance, but because it is not a thing which bears reading over many times, for it is utterly impossible to make the draining of a flower pot an interesting subject. Therefore we say, once for all, *drain well*, or success will never be realised. By draining well, we do not mean the throwing of a large quantity of potsherds into the pot in a careless manner, but placing a few pieces carefully—a large piece over the hole, some smaller ones round about and over this, with the hollow side downwards, and finishing off with still smaller ones, or some charcoal, which will be preferable, the whole being covered with rough peat fibre, to prevent the soil mixing with it. Some growers begin repotting at a stated time in the spring, and go through their whole collection at one time. This system may be convenient, but it is certainly unwise and most unnatural; indeed, it is impossible to lay down any definite rule, as some few things must be repotted directly after blooming. Now, as all plants do not start into growth at the same time, though in the same temperature, those which are dormant cannot take up the nourishment from the new soil, which

consequently by frequent waterings becomes soddened, and comparatively old before the roots are in a fit state to move into it. It has always appeared to us—and wherever practicable, we have been guided by this in our practice—that the very best time to repot a plant is in spring, just when it begins to push forth new growth, because then the roots and branches are acting in unison, and both are in a fit state to receive fresh nutriment.

Everything being in perfect readiness—the compost properly mixed, and in a nice half-moist condition, neither wet nor dry, and the pot either new or clean, dry, and properly drained—the plant to be shifted, if a large one, should be stood upon the stand before mentioned, the pot slipped down, and the old drainage taken away. The roots, if matted, must be carefully disentangled, as much of the old soil being removed as can be done without injury to them. Then some of the new compost must be put into the fresh pot, just sufficient to bring the surface of the old soil to within about half an inch of the top, and having carefully placed the plant in the middle, and at the proper level, the new soil is to be filled in around it, care being taken to press it down quite firmly. After this operation has been performed, a little higher temperature and extra shade should be given to the plants, to prevent them suffering from the slight check which repotting naturally must give them, and to encourage them to put forth fresh roots more quickly. The only difference in shifting or repotting large and small plants is, that in the case of the latter, the plant can remain in the hand of the operator, and the stand need not be brought into use. Those plants which have strong coarse roots may have a large shift each time, but care must be taken not to over-pot those having fine and delicate roots, as it is far better to repot twice, or three times,

than to risk the health if not the life of a plant by over-potting.

Little more need be said upon this subject, save that the sieve, so necessary to some cultivators, should be utterly discarded, and the soil prepared by being chopped into pieces with a spade; by the time it is mixed together, it becomes sufficiently fine, and needs no sifting. Those plants which bloom better when kept in small pots, and which are not to be shifted, should, at the period when others are repotted, have the surface of the soil in their pots stirred, some of the worn-out material being removed, and replaced with new.

WATERING.

AFTER the potting season, and as soon as the roots have begun to run freely in the new soil, water will have to be supplied more liberally than during the winter, or resting period; while, as the days increase in length, and the sun in power, scarcely too much can be given to Stove Plants, if the roots are in an active state and abundant throughout the soil, and the drainage is in good order. At this period, too, the syringe must be brought into play, to refresh and keep the foliage clean, and to create a genial moist atmosphere, which is so essential to tropical plants. Care must, however, be taken that the syringe is not used with the sun shining fully upon the house, or the result will be the burning of the leaves, and the disfigurement of the plants for a long time. There are also some few kinds of plants that do not like to have water thrown over their leaves,

and the peculiarities of these must be attended to. As the season of growth draws to a close, and the days become shorter and colder, the atmosphere of the stove must be gradually reduced to a drier state, and less water must be given to the plants, both to the roots and overhead. When the wood has become thoroughly ripened, the plants will again become dormant, or so far dormant that no active growth will take place, though some will put forth their flowers, and in this state they will remain through the winter months. The best time of the day for watering plants during the summer season is towards evening, after the houses are closed; but in autumn and winter this operation should always be performed in the morning.

During the growing season one thing requires particular attention, and that is ventilation, a matter on which some general advice has been already given. Fresh air must be admitted in the spring sparingly, and increased as summer advances, when, of course, it may be freely admitted, but always in such a manner that it may become partially warmed before the plants feel its influence. By about the middle of September less air will be required, so that the quantity admitted must be gradually diminished until the end of autumn, when very little indeed will be required, and that which is admitted must be let in so as to become warmed in its progress.

INSECTS.

TROPICAL plants are very liable to the attacks of several kinds of insects, of which the more injurious are:—the Green Fly (*Aphis*), the Mealy Bug (*Coccus adonidum*), the Turtle Scale (*Coccus testudo*), the Black Thrips (*Thrips adonidum*), and the Red Spider (*Acarus tellarius*). These all attack Stove Plants to such an extent as to render them unsightly, and if they are not diligently searched for and destroyed, they will soon bring the plants into a sickly condition, which will completely destroy their beauty, even if it does not end in death.

The *Green Fly* may be destroyed by fumigation with tobacco or tobacco paper, or by syringing with tobacco water, or dusting with snuff. In the latter case, the snuff must, after a day or two, be well washed off with the syringe.

The *Mealy Bug* is a small white powdery insect, of which the female is wingless, and too frequently found upon our Stove Plants. The insects must be carefully washed off by means of a small brush, and warm soft soap and water, or by employing some of the specifics which are advertised at the end of the volume, all of which are excellent remedies, so that we cannot recommend one in preference to others.

The *Turtle* or *Brown Scale* is also a great pest on some kinds of plants, but it may be destroyed in the same manner as Mealy Bug.

The *Thrips* is a very injurious insect, but it may be got rid of by fumigation with tobacco or tobacco paper, which, if properly used, will totally destroy them; or the plants may be syringed by some of the before-mentioned remedies.

The *Red Spider* speedily renders unsightly the foliage of

any plant that it attacks, destroying the fresh greenness of the leaves, and turning them to a dirty white or brown. The most effectual mode of destroying this pest, when it has been allowed to spread, is to sprinkle some flowers of sulphur upon the hot-water pipes, and shut the house up close; this remedy must be used with great care, for if the pipes should be too warm, the foliage would suffer. It is far better, however, to keep a careful watch upon the plants, and destroy the spider when it first makes its appearance, as extreme measures oftentimes cause the death of the plants.

Some cultivators maintain that insects are in all cases the effects of disease, and not the cause; and that plants, when treated in a proper manner, will not become infested by them. Though not prepared to endorse this assertion in its fullest sense, we yet believe it to be correct in the main. There is no better safeguard against any serious attacks of insects than keeping up a vigorous state of health in the plants, and maintaining strict cleanliness in the structures in which they are grown, and in the various materials brought into use in the course of their cultivation.

TRELLISES AND TRAINING.

MANY of our most handsome Stove Plants are climbers, or if not climbers in the true meaning of the word, are trailing plants, requiring the support of a trellis of some kind to enable them to display their flowers to the best advantage. Trellises are now principally made of galvanised wire, which is much better than when painted, as it lasts longer, and is always free from rust. Constructed of this material, they are lighter in appearance, and more durable, than when made of wood; and, moreover, can be made to any particular shape, according to the taste of the cultivator. The umbrella-shaped trellis is a kind admirably adapted for such plants as *Hexacentris*, *Lapageria*, &c.; while for such as *Dipladenias*, *Allamandas*, and *Stephanotis*, we prefer the balloon shape to any other. The pillars of the stove may have wires fixed around them, on which to fasten climbing plants, and wires taken from one pillar to the other may form festoons, which will have a beautiful effect in a large house. For furnishing these situations the plants should be planted out in a border, or in slate boxes, as they will succeed very much better when so grown than when in pots; but as they will probably grow too freely, the pruning-knife must be applied whenever it becomes necessary.

Wire baskets may also be used for many kinds of plants, and they afford a pleasing change; indeed, many plants, such as *Achimenes*, *Æschynanthus*, *Columneas*, and some of the small-growing *Hoyas*, are only seen to advantage when grown in this way.

Such plants as *Ixoras*, *Francisceas*, *Gardenias*, and others

of like habit, must be grown into handsome round plants, and will perhaps require a few neat sticks to keep them in shape, but the fewest that will suit this purpose should be used. We advise that, by all means, that most objectionable of all styles, the flat-backed or one-sided, should be avoided in training plants, for nothing can be in worse taste, or be a greater eyesore, than a house filled with such deformities. The sticks used for training or supporting the plants should be painted of a light green colour, for when not so painted the white has a very bad appearance, and is not to be tolerated.

RESTING AND DRYING OFF.

THESE terms are often used as if they were synonymous, but the two modes of treatment indicated by them are very distinct in practice. The resting of plants is brought about by reducing the temperature, and withholding a portion of water, by which means the subjects operated upon are kept dormant, while, at the same time, the young fibrous roots are not destroyed. Drying off is a widely different process, and one that is frequently carried on in a very erroneous manner. We now allude to such subjects as *Achimenes*, *Gesneras*, *Gloxinias*, *Amaryllis*, &c. These are often cast aside as soon as they have done flowering, and little care is bestowed upon them until the season for again starting into growth. Instead of such treatment, they should after blooming receive extra care, in order to enable them to fully mature their

bulbs or tubers, so as to secure a vigorous bloom the next season. It is the want of proper care in this particular thing that leads to so many disappointments in growing these plants a second year, and gives colour to the erroneous notion that they are difficult to manage. Quite the reverse is indeed the case, for nothing can be easier to grow, or be capable of making a finer display when in bloom, than many of these bulbous and tuberous-rooted plants. If, however, care is not bestowed upon them after the flowers have faded, it is not reasonable to expect them to be as fine the following season, because after flowering the new growth has to be perfected, and it is upon the healthy development and maturation of that, that the production of flowers mainly depends.

PROPAGATION.

IT would occupy too much space in a handbook like the present, to enter minutely into all the methods which are practised for the increase of various kinds of plants. We will, however, offer a few plain directions, which will enable any growers, if they have the convenience and inclination, to increase some of their favourites. In the first place, a small house should be set apart for this purpose as a propagating pit; it should be low-roofed, and well heated, and provided with bottom heat and plunging materials. A stock of bell-glasses will also be required, as well as some handlights, for keeping certain kinds very close. Where the collection is small, and a

house is not wholly needed for the purpose of propagation, many plants may be increased by putting the cutting pots into a handlight, kept close, and placed at the warmest end of the plant stove, the treatment in other respects being such as is directed in this chapter.

Plants are propagated in various ways, according to their manner of growth. The usual methods are as follows:—By sowing seeds, by striking cuttings, by grafting, by cutting up the crowns of old plants, and dividing those which grow in tufts, and in some instances by cutting the roots into small pieces, called root-cuttings, or the stem into small portions or eyes. Thus it will be seen that an acquaintance with the structure and habits of plants generally is necessary to enable any one to become a good plant propagator.

Seeds.—Spring is the best time for sowing seeds of all kinds of tender plants, though there are some few things that succeed best when sown immediately they are ripe. Having prepared the soil, and taken especial care that the drainage is perfect, let the seed pan or pot be filled up to within a short distance of the rim, the actual degree of fulness being regulated by the size of the seeds to be sown, for if large, more room must be allowed for covering them with soil than would be required for smaller seeds. Indeed, many very fine seeds require no covering at all, but must have a piece of paper or glass laid over them until they germinate, to prevent them from being washed or blown away. The covering for all small seeds should be light; a good rule is that seeds should be covered about their own depth with soil, and the soil should be passed through a fine sieve before use. After sowing, the pots should have a gentle watering with a small fine-rosed watering pot, and be placed in a gentle bottom heat, nothing more being required beyond the maintenance of a steady heat, and keeping the soil in a uniformly moist (but not wet) state,

until the seeds have germinated. When the young plants have made about half an inch of growth, or formed one or two or more leaves besides the cotyledons or seed leaves, according to the size and habit, they should be carefully shaken out, and either planted singly in small pots, or two or three put together in one pot, at equal distances apart, close to the side. This latter plan should be adopted for hard-wooded and very slow-growing plants, or for soft-wooded plants that may be intended for flowering in masses. In the case of the latter, they will remain together without disturbance at the next shifting; but in the case of hard-wooded plants, they should be potted separately by the time they have made one year's growth. Many large seeds which have hard woody skins or coverings, are much benefited by being placed in hot water for some twelve or twenty-four hours before sowing them, and are then best placed singly in small pots. Some seeds will germinate very quickly, and others will be many weeks before they show the least sign of vitality; therefore, do not be hasty in turning out seed pots because the seeds have not grown, unless it is quite evident they are dead. Some seeds under our own care have been as long as four years in germinating, none of them having started the first year, but a few having made their appearance from time to time during the next three years.

Cuttings.—These may be taken from various parts of the plant, but, as a rule, cuttings of hard-wooded plants strike root more readily if taken off with what is called a heel—that is, with a portion of the old wood attached. The reason such pieces root more quickly is obvious, for as there are a quantity of latent buds at the junction of the old and young wood, these soon produce roots freely. Other plants, including all soft-wooded plants, may have any of the young shoots that are not too robust, and full of sap, taken off as cuttings. It

will be necessary here to offer a few words respecting the soil to be used, and the treatment required to lead to success. First, the pots must be filled up two-thirds of their depth with potsherds, the upper ones being small, so that the soil does not get mixed with them. The soil must be of the same kind that is suitable to the parent plant, but sifted and made very sandy, as this allows the cuttings, when struck, to be separated more readily, and without breaking the young and tender roots. The soil, as filled in, must be pressed down very firmly, and upon the top of it must be placed a layer—half-an-inch to an inch deep, according to the size of the cuttings—of clean sharp silver sand. The pots will now be ready for planting. The cuttings, having been taken from the plant, must be cut through with a sharp knife, close below a joint or bud, and the bottom leaves cut off. The quantity of leaves to be taken off the cuttings will depend upon the kind of treatment they are to receive; if they are to be placed under a close bell-glass, or in a close moist frame, the removing of a few leaves will be quite sufficient, while if they are to be exposed to a considerable amount of air, the greater portion of the leaves must be removed; but at all times sufficient must be taken off to allow the cuttings to be firmly fixed in the soil, as it is very important that they should not be moved after being inserted. If they are placed under a bell-glass, the glass will require frequent wiping upon the inside, to dry up superabundant moisture; and when the cuttings are rooted, this glass must be tilted a little, till eventually it may be removed entirely, which should be done, if possible, a day or two before potting off. During all this time the cuttings should be well shaded, as it would be very injurious to them were they to be suffered to droop, or "flag," as it is commonly called. Large-leafed plants may be increased by a single eye, with a leaf attached, planted as a cutting; and

many genera, such as *Gloxinia*, *Gesnera*, *Begonia*, and others, may be increased by a single leaf, without an eye, or even by small pieces of leaves inserted in sand.

Grafting.—This method is resorted to either to encourage the growth of weak and delicate kinds, by grafting them upon a stronger grower, or to reduce gross and vigorous sorts by working them upon weaker kinds, so as to induce flowering shoots. Grafting is adopted with some kinds of *Ixora*, *Allamanda*, *Franciscea*, *Ipomæa*, &c.

Cuttings of Roots and Stems.—Some kinds of plants can be increased with great facility, by cutting the stout roots into short pieces, or the stems into lengths containing an eye or two, and covering them with soil, the pots being placed in a strong bottom heat. This plan is adopted with such plants as *Dracænas*, *Petræas*, &c.

Division.—This mode of propagation is too well known to need commenting on here, beyond the remark, that practice alone can perfect any one in this most interesting, but, in many instances, very tedious and delicate operation.

HYBRIDISING AND CROSS-BREEDING.

THIS subject has become of such great importance, and the results achieved by it during the last few years have been so extraordinary, that it cannot be passed over in silence in any work treating upon plant culture, without causing a feeling of disappointment to many into whose hands such a work may be expected to fall. Although, therefore, it would be unseemly to enter deeply into the subject, we propose to offer a few hints and remarks, such as may be likely to prove useful to the amateur plant grower, to whom this work is principally addressed. The terms hybridising and cross-breeding are often, though erroneously, used as synonyms; nevertheless, although there is a considerable difference between the two, yet the principal object which the operator has in view is the same, viz., the improvement of the flower as to size, or form, or colour, or all these conjointly; or the improvement of the foliage; or the production of a better habit and constitution of the particular plants operated upon.

Hybridising, in the strict sense of the term, is the raising a progeny between two distinct species, by applying the pollen of one species to the stigma of the other. The plants raised from these two species will, as a rule, be barren, and incapable of again producing seed. Cross-breeding is the raising of new forms, from the fertilisation of two varieties of the same or of allied species, which will be fertile, and again available for cross-breeding. To these two processes, we are indebted for many of the gayest ornaments of our gardens and plant houses, as will be evident when we quote such examples as *Pelargoniums*, *Fuchsias*, *Roses*, *Dahlias*, and many other florist flowers, as well as *Achimenes*,

Gloxinias, *Gesnerias*, *Ericas*, *Azaleas*, *Amaryllis*, *Dipladenias*, and many others; and lastly, though not least, the Orchids themselves, for these are yielding to the power of the hybridiser, as may be seen in such cases as *Cattleya exoniensis*, *Calanthe Veitchii*, and many others.

In setting about the raising of either hybrids or varieties, the operator should set before him a definite and settled purpose, for if promiscuous seedlings are reared a great loss of time will ensue, seeing that good results from such crossings cannot be expected. If, on the other hand, every cross is made with some special object in view, the chances are that better results will reward the operator. To amateurs this pursuit offers a splendid field for enterprise, possessing as it does the charm of novelty, and invested as it is with the greatest interest. Those who devote themselves to the production of new forms of flowers, have several things to take into consideration, and must carefully note the results of each particular experiment, in order to enable them either to prosecute a successful effort, or to warn them to desist if a wrong track has been entered on.

Among the things to be worked for, in either hybrids or varieties, are improvements in colour, shape, size, and substance of the blooms, in the form, size, texture, or marking of the leaves, or in the habit of growth and the prolificacy of blossoms—this latter, the securing of free-flowering properties, being of the highest importance in the case of decorative plants. We have always found that in crossing plants, the seedlings are more prone to follow the colour of the male parent, and the habit and style of growth of the female. Therefore, if the result desired be richer and brighter colours, the paler of the two parents should be made the seed producer. We had a striking example a few years ago, in the case of some *Gloxinias*, of the influ-

ence of the pollen; it was at a time when the varieties of *Gloxinia* were few, and *G. Fyfiana* was the only erect-flowered kind. We fertilised *G. rubra grandiflora* with pollen taken from *G. leuconerva*, the latter then a new variety, our object being to obtain varieties with white-veined leaves and red flowers; and as *G. leuconerva* was not so robust in habit as *G. rubra grandiflora*, we made the latter the seed-bearer, but in the result, out of several hundreds, we had but one or two which produced red flowers; the habit was robust, and much stronger than the male parent, and the white veins less conspicuous on the leaves, but the flowers were of a much richer colour, being a deep purple, and larger, partaking in the latter character of the mother plant. Thus the experiment, though it produced some very handsome varieties, was in direct opposition to our wishes, but it afforded a lesson by which we profited in after attempts at cross-breeding.

REMARKS UPON FERTILISATION.

IN seed saving, independent of hybridising or cross-breeding, astonishing results may be obtained by a little selection and care. These remarks will apply most forcibly to the choice strains of flowers which are grown for early spring, autumn, and winter decoration, and which are to a great extent deprived of insect agency for the fertilisation of their flowers, and are consequently dependent upon artificial impregnation. In performing this operation, the pollen of one flower should be used to fertilise its neighbour, as this ensures a greater produce of seeds, and a more vigorous constitution in the plants resulting from the operation. Being a delicate and tedious process,

it will of course occupy some time, but the greater quantity of seed thus obtained will amply repay the extra trouble. That this is so, we have had some striking proofs in the course of some experiments we have made in reference to this question. For example, we found that the stigma of one flower fertilised with pollen from a separate flower, but growing upon the same plant, yielded four times as much as when left to fertilise itself, and above one-half more than when artificially impregnated with its own pollen. Carrying the experiment still further, and bringing pollen from another plant of the same species, but which had not originally sprang from the same stock, we found that the produce was three times the quantity yielded under the most favourable circumstances of the other experiment, viz., the fertilisation by pollen from a separate flower of the same plant. The contrast was, however, greatest with the flower which received no aid whatever; for with the foreign pollen applied artificially, the yield of seed was finer in quality, and twelve times as much in quantity, while in the respective cases of fertilisation with foreign pollen (that is, pollen from a different plant), and with its own pollen, the yield was five times greater in favour of the foreign pollen. This will be seen more clearly by the following table:—

Experiment 1.	Experiment 2.	Experiment 3.	Experiment 4.
Produce of a flower not receiving artificial aid in any way.	Produce of a flower fertilised with its own pollen.	Produce of a flower fertilised with pollen from a separate flower grown upon the same plant.	Produce of a flower fertilised with pollen from a different plant of the same species.
25 Seeds.	60 Seeds.	100 Seeds.	300 Seeds.
Yield of Seeds, one-twelfth that of Experiment 4.	Yield of Seeds, one-fifth that of Experiment 4.	Yield of Seeds, one-third that of Experiment 4.	Yield of Seeds, highest both in quantity and quality.

This experiment was repeated several times, insects of all kinds being most carefully excluded from the flowers; and though differing in some cases in the number of seeds, yet in each the proportions were about the same. Now, although we are not prepared to assert that the like results can be obtained in the case of every species or variety, yet, from other experiments we have made, we are certain that the yield of seed will be larger and finer when the flowers thus receive the benefit of a cross with pollen from a separate plant, and where insect agency is deficient, it should always be supplied by artificial means. To avoid self-fertilisation the flower should have the stamens removed as soon as possible after it is open; this may be done by cutting them out with a small pair of scissors. According to some authorities, certain flowers fertilise themselves before expanding, but this is no doubt very exceptional.

A SELECTION OF

STOVE FLOWERING PLANTS.

THE species we have selected and briefly described in the following pages, are all deserving general cultivation; and, as will be seen, many are recommended as beautiful objects for the decoration of the plant houses, sitting-rooms, and for bouquet making only, whilst others, besides possessing these qualifications, are, in addition, invaluable for the purpose of forming exhibition specimens. Thus the amateur will be enabled to choose the kinds best adapted for his particular purpose.

ACHIMENES.

This is a beautiful family of *Gesneraceæ*, too often cast aside by plant growers; and being tuber-like plants, dying down annually, they often get forgotten during the season while they are stored away in the dry state. The *Achimenes* are plants which should especially commend themselves to those who have but a limited quantity of glass, as they serve to enliven the houses during the period when other plants are out of doors.

Their culture is very simple. For soil, a compost of a light rich character, composed of peat and leaf mould in

equal parts, along with a sixth part of sheep manure, well decomposed, and enough silver sand to give the whole a white appearance, will be found to suit them best. *Achimenes* should not be shifted. A few tubercles should be started every month, down to the end of May, in order to ensure a succession of bloom. When they have made shoots an inch or two in length, transplant them into the pots or pans in which they are intended to flower, having first well drained them, and filled them with the compost recommended above. They delight in heat, moisture, and shade, while growing; but when in bloom they may with safety and good effect be removed to the cool conservatory, care being taken not to expose them to cold draughts. When the young shoots are a few inches long, the stakes should be provided, making the centre the tallest, and letting a the others slope outwardly, to form a symmetrical pyramid; care should be taken to keep them frequently tied during this period, and until they show flower an occasional watering with weak liquid manure will be found very beneficial to them. Planted in baskets *Achimenes* form lovely objects, hanging like globes of flower, and if the different colours are mixed, the effect is all the more striking. *A. longiflora major*, *longiflora alba*, and *Aurora* planted together make a lovely basket; so do *Pink Perfection*, *grandis*, and *longiflora alba*, or, indeed, any and all of them, if the colours are properly selected. As the plants advance towards maturity, and begin to show signs of decay, withhold water, but let it be done gradually, so that the tubercles do not get starved before the leaves have failed. Remove the tops as soon as they are quite dead, and store the pots containing the roots, upon their sides, in a situation where no moisture can reach them, where they may remain until wanted in the following spring. The family has been

largely increased during the last two or three years, and though all are worthy of cultivation, we have only space to enumerate the best.

A. Advance.—A distinct and handsome dwarf-growing kind; the flowers are deep reddish purple, with a light spotted eye, shaded towards the margin.

A. Ambroise Verschaffelt.—A very gay and attractive kind, forming beautiful specimen pans, or fine masses when suspended in baskets, either by itself or when mixed with other varieties; the flowers are pale or whitish lilac, with elegant radiating violet lines, and carmine spots in the centre.

A. Argus.—A most desirable variety; the flowers are rich plum colour, with large deep orange eye, spotted with carmine, and having the upper lobes of the flowers beautifully rayed towards the margin.

A. Aurora.—A remarkably fine variety; the flowers are fully two inches in diameter, the colour deep heavy scarlet, with a light yellow eye; very effective as a basket plant, contrasted with other colours.

A. carminata elegans.—A beautiful variety, of free branching habit, and producing spikes of rosy carmine flowers upwards of eighteen inches in length. It may be grown into a specimen of three or four feet in diameter, and is thus a charming object for the summer and autumn months.

A. Dazzle.—This is a very handsome small-flowering kind, but the richness of its scarlet colour and the quantity of its flowers fully compensate for its want of size.

A. Dr. Buenzod.—Flowers crimson purple, beautifully spotted with orange in the centre.

A. Dr. Hopf.—This is a very pretty variety, and of dwarf good habit; the flowers are pure white, with pink eye; a very desirable form.

A. Eclipse.—A beautiful variety, of very free-blooming

habit; the flowers are orange red, the eye prettily spotted with carmine, producing very long well-clothed spikes; the very best for exhibition purposes.

A. Georgiana discolor.—Of fine, robust, and very distinct habit, the large leaves contrasting well with its very dissimilar flowers, which are large, of a bright orange colour, with yellow centre.

A. grandis.—A splendid hybrid, very free flowering, and a valuable acquisition; the flowers are rich violet in colour, with a deep orange eye, finely spotted and shaded with carmine.

A. Leopard.—The flowers of this variety are bright magenta rose, with a well-spotted throat, of good size and form; it is a very effective kind, the freshness of its colour making it a general favourite.

A. longiflora alba.—This is a most desirable kind; it is a good strong grower and free bloomer; the flowers are pure white, slightly marked with radiating lines round the eye. A general favourite, its colour always making it effective for contrast.

A. longiflora major.—A strong-growing kind and a very profuse bloomer; the flowers are very large, and of a beautiful blue colour. It may be grown into magnificent specimens, and is also very effective when grown in baskets.

A. Magnet.—A very free-flowering hybrid; the colour is orange, spotted with crimson, deep carmine circle, and spotted eye. A very pleasing variety.

A. Margarettæ.—This, like *longiflora alba*, forms a beautiful contrast with other colours, and is even of a purer white than that variety, for the flowers of *Margarettæ* are large and snow white, destitute of any markings whatever.

A. Mauve Queen.—A splendid variety, being a great improvement upon *A. longiflora major*, producing an abundance

of beautiful large mauve-coloured flowers, with a conspicuous light chocolate eye; it is of splendid form and fine waxy substance, and is very effective grown as a specimen plant, or suspended in a basket.

A. Meteor.—This is a very fine kind, of dwarf habit, producing large crimson scarlet flowers, with a yellow spotted eye.

A. Parsonsii.—A very distinct kind; flowers of fine form, rich salmon crimson in colour, with an orange eye.

A. Pink Perfection.—A. fine well-formed flower, nearly three inches in diameter, of a deep rosy pink, the upper part of the eye rich carmine, the under lobes beautifully rayed with violet. This variety should find a place in every collection.

A. purpurea elegans.—This is entirely a novel colour amongst *Achimenes*, and also produces its blooms very profusely; they are of good size and form, and in colour a deep mulberry or claret, while the throat is light orange with dark spots.

A. Rollissoni.—Very distinct, being a hybrid between *A. Scheerii* and *A. gloxiniflora*. It is robust in habit, and very free flowering. The blooms are purplish lavender, the lobes being very large and smooth on the edge, the throat yellow, and spotted with purplish crimson spots.

A. Rose Queen.—This is a beautiful new form of this desirable genus. It is compact in habit, and a profuse bloomer. The flowers are large, stout, and of rich rose lake in colour, shading to deep purple, with an orange throat.

A. Scarlet Perfection.—A very showy variety; flowers rich carmine scarlet, orange eye, surrounded with a light ray, and red centre.

A. Sir Treherne Thomas.—A good free-blooming variety,

and very effective when grown as a basket plant; the flowers are bright red crimson.

A. Stella.—This is a very distinct and beautiful kind; the flowers are two and a-half inches in diameter, clear magenta, with orange eye, the limb spotted with carmine, and the edges prettily serrated. A most effective variety, and a universal favourite.

A. Vivicans.—A very handsome basket plant; the flowers are carmine, with crimson eye, shaded round with a blue ray. It is very distinct, and a most profuse bloomer.

A. Williamsii.—A charming free-blooming variety, of good, compact, and branching habit. Leaves bright green, and toothed at the edges; flowers large, and of good substance, limbs two inches and upwards across, and vivid scarlet in colour, throat orange yellow.

Adhatoda.

A genus of *Acanthaceæ* of which nearly one hundred species are described, few of which have yet been introduced to our gardens, though many of them would be very ornamental. The soil best adapted for the cultivation of these plants is good fibrous peat and loam, with a liberal addition of silver sand; and it should be treated to a good share of heat and moisture. Propagation is easily effected by cuttings, which should be inserted in a pot and placed under a bell glass.

A. cydoniæfolia.—This is a scandent, or rather an ascending, evergreen stove plant. The leaves are opposite, ovate, obtuse, dark green, and as well as the branches slightly downy. The flowers are produced in the axils of the leaves, the tube of the corolla being white, the upper lip white, tipped with purple, the lower lip large, rich deep

purple, with a white stripe down the centre. It is a fine plant for training up pillars or rafters, the rich contrast of colours being very effective; it will also bloom in small pots in quite a young state, and is very ornamental when in bloom as a basket plant. When aged, it flowers profusely during the autumn months. Native of Brazil.

ÆSCHYNANTHUS.

A genus belonging to the Cyrtandraceous division of the *Gesneraceæ*. The plants form beautiful objects when grown in baskets, and suspended from the roof of the stove. They are scandent in habit, and produce simple, entire, thick, fleshy, opposite leaves, the flowers being produced in terminal umbels, as well as from the leaf axils. They are all natives of India and the Indian Islands, and luxuriate in a high temperature and moist atmosphere. *Æschynanthus* should be planted in baskets, in a mixture of fibrous peat, sphagnum moss, and lumpy pieces of charcoal; and they should be allowed to hang down over the sides of the baskets. When thus managed, these beautiful plants will grow and bloom magnificently, and no stove should be without a good collection of them. Cuttings of the young shoots root readily in sandy peat; if the atmosphere is not close place a bell glass over them until rooted.

Æ. cordifolius.—A very free-flowering species; the leaves are heart-shaped, dark green on the upper side, paler below, quite smooth; the flowers are produced in clusters from the axils of the leaves, and are deep red in colour, striped with black, the inside of the tube orange. It blooms for a long time through the summer months. Native of Borneo.

Æ. fulgens.—A beautiful species, of very free-flowering habit, with opposite, large, oblong-lanceolate acuminate

leaves, thick and fleshy in texture, and bright dark green in colour. The flowers are very long, and produced in terminal umbels; they are bright crimson in colour, the throat and under side of the tube orange, and the lobes striped with black. Native of Tavoy.

Æ. grandiflorus.—The stems of this plant will root from the under side; the leaves are lanceolate in shape, smooth, fleshy in texture, and dark green in colour; the flowers are large, deep crimson and orange in colour, and freely produced. It is found growing upon trees in the East Indies.

Æ. javanicus.—A beautiful species, producing an abundance of its large bright red flowers, stained with yellow in the throat; the leaves are dark green, opposite, ovate, and somewhat fleshy. It comes from Java.

Æ. Lobbianus.—This is a very fine species, producing rich scarlet flowers, which contrast beautifully with its dark green fleshy leaves. It blooms during June and July, and is a native of Java.

Æ. longiflorus.—A beautiful kind, of free habit of growth, and producing long scarlet flowers in great abundance during the three summer months.

Æ. miniatus.—This is a native of Java, an island which appears to be very rich in members of this beautiful genus. The leaves are dark green and fleshy; the flowers are rich vermilion, and freely produced, both in terminal umbels and from the axils of the leaves, during June and July.

Æ. pulcher.—A handsome creeping plant, with the leaves ovate-lanceolate in shape, and deep green in colour; the bright scarlet flowers are produced both in terminal umbels and from the axils. Native of Java.

Æ. speciosus.—This fine species has rich orange coloured

flowers, which are freely produced in May, June, and July; it is of good free habit of growth, and, like so many of this family, a native of Java.

Æ. splendidus.—This is a fine kind, and easy of cultivation, and the flowers remain a long time in perfection. The leaves are long, lanceolate, and of a light yellowish green colour; the flowers are produced in dense umbels, and are large, bright orange scarlet in colour, spotted with black on the margins. It is a garden hybrid.

Æ. tricolor.—This is a very handsome kind, with the leaves cordate, dark green above, paler on the under side, the edges and under surface slightly hairy, as are the stems; the flowers are produced mostly in pairs, and are a deep blood red, the throat and base of the lobes bright orange, the three upper lobes being striped with black; it blooms at the same time as *Æ. cordifolius.* Native of Borneo.

Agalmyla.

This genus belongs to the Cyrtandraceous section of the *Gesneraceæ.* Its name signifies forest ornament, and for growing in baskets and suspending from the roof it has few superiors. Should be planted in fibrous peat and sphagnum moss, and treated to a liberal supply of water. These plants may be easily increased by cuttings of half-ripened wood in gentle bottom heat.

A. staminea.—A creeping plant, with a stout stem, producing oblong-lanceolate deep green leaves, about six inches long. The flowers are bright scarlet, and produced in clusters of from eight to twelve in the axils of the leaves. A very effective stove plant, blooming through June and July. Native of Java.

ALLAMANDA.

A splendid family of Apocynaceous plants for the decoration of plant stoves, and invaluable for exhibition purposes. All the species are yellow flowered, so far as we are aware, except *A. violacea*. They are comparatively easy to grow, and, when properly managed, will continue to give a succession of their bright-coloured flowers for five or six months. If allowed to make long growths, they will require a trellis, the most desirable being that of a balloon shape; but the best system of growing these plants is to prune hard back in the spring, just before the buds start, after which the young shoots should be pinched back once or twice, to induce them to throw out laterals, and thus to make a bushy plant. When treated in this manner a few stakes only will be necessary, to give them uniformity and symmetry in shape and appearance. The soil should be composed of equal parts fibrous loam, peat, leaf mould, and silver sand, with the addition of a little well-decayed manure. When potted, the plants should be placed in a temperature ranging from 65° to 75°, and as near the glass as possible, and they must be treated liberally with water from the syringe until October, when it must be gradually withheld. In spring they will want repotting, and to be again treated in the same way, when they will soon throw out blooming laterals. If required to bloom early, they must be started in the beginning of the month of January. All the species may be increased by cuttings; but *A. grandiflora* is much improved by grafting upon some of the more robust growing kinds.

A. Aubletii.—This very fine species, in its native country, is said not to climb, but with us its stems are scandent, with rather hairy, broadly oblong, sharp pointed leaves, which are

produced four or five in a whorl; the large flowers are freely produced, and rich bright yellow in colour. This species has long been in cultivation in our stoves, and may still be reckoned amongst the best and most beautiful. A native of Guiana.

A. cathartica.—This fine old species is best used as a pillar or rafter plant, in which situation it is most effective, and produces its bright yellow flowers for many months in great profusion; the leaves are obovate, obtuse, smooth, and four in a whorl. The blooms are not so large as in the other kinds, and, consequently, it is not so useful as an exhibition plant. It is a native of the Antilles.

A. Chelsoni.—This plant is said to have been introduced from Western Tropical Africa; if this is correct it is the only one with which I am acquainted that is a native of Africa. This plant resembles *A. Aubletii* in general appearance, of which it may probably be only a variety, its chief distinctions being its long laterals, which are densely laden with blooms, and in the long period of time which it continues to produce them. The flowers are large and of great substance, the limb standing well up, and not reflecting as is the case in *A. Aubletii.* The colour is a shade between the last-named species and *A. cathartica;* it is a very ornamental climber, and a decided acquisition.

A. grandiflora.—A very fine species, native of Brazil; until quite recently considered the finest of all; and although it cannot now be so ranked, at least in point of size, yet no other kind has the peculiar pale clear yellow of this species; it is a very free bloomer, and a most valuable plant either for home decoration or exhibition purposes. This can be grown without any trellis, and can be kept as a dwarf plant by training it to sticks when young.

A. Hendersoni.—This remarkably handsome species is a

most abundant bloomer, and is of bushy habit, forming short-jointed growths, and producing its gorgeous flowers even when only some ten or twelve inches high; it will also continue to give a succession of its large corymbs of blooms for ten months out of the twelve. In colour the flowers are of a deep rich orange yellow, with a deeper shade in the throat; before expanding they are deep maroon colour. This most desirable plant is a native of New Grenada.

A. nobilis.—A grand acquisition to this fine genus. The habit is scandent, and the flowers are fully six to seven inches in diameter, and of the brightest and clearest yellow, rather darker in the throat, but without any stain or marking, added to which it is sweet scented. Combining all these good qualities, and being remarkably free flowering, it will make a plant of the first importance for exhibition purposes as well as for home decoration. Native of Brazil.

A. Schottii.—A fine strong-growing species, producing oblong-acuminate leaves, about four in a whorl, and quite smooth on both sides; the flowers are large, of good substance, and rich bright yellow. It is a native of Brazil, in the province of Parahiba, where it luxuriates on the river banks.

Amaryllis.

The plants to which this name is commonly applied belong to the section or group *Hippeastrum*, which some botanists regard as a distinct genus. They are typical of the order of *Amaryllidaceæ*. Like many other bulbous plants, they have gone out of fashion, and have been far too much neglected in this country of late years, but their value is now again beginning to be appreciated. Why they should ever have fallen into such neglect it is difficult to under-

stand, for they are most accommodating in their nature, being suitable plants for growing either in the stove, greenhouse, or fernery; and as they are dried off and at rest part of the year, they require very little space, for during the resting period they may be stowed away in any dry cool place. In addition to this, when in bloom they are remarkably showy, the flowers being large, and richly and gorgeously coloured.

The most suitable soil for the cultivation of these fine showy bulbs is a mixture of good fibrous loam, with about one-fourth leaf mould, and some well-decomposed manure, and a little silver or river sand added. After blooming the plants should be potted, and they then require the heat of an intermediate house to encourage a good leaf growth, and mature their bulbs. When this is done, they may be placed away under the stage, or stowed upon shelves in any dry cool place, to be brought out and placed in a little heat to develope their flowers as occasions may require. With a moderate collection of these bulbs, a succession of beautiful flowers, which will add greatly to the effect of a collection of plants, may be had through the winter and spring months. We have some gorgeous flowers open nearly every week in the year. Most of those here described are garden hybrids and varieties which are great improvements upon many of the original species. They may be increased by offshoots and by seeds.

A. Ackermannii pulcherrima.—A superb flower, with rich deep crimson throat, streaked very handsomely with green. This is one of the finest of the dark species.

A. Alberti.—This is an example of the extraordinary manner in which plants would seem to conform to the public taste; for no sooner are these plants attracting attention, than we have a double form sent us from Cuba,

where it is said it has been cultivated. The plant resembles *A. equestris* in habit, but the blooms are quite double, and upwards of six inches in diameter, of a rich orange red colour, shading to yellow towards the base of the petals.

A. Aurora.—The flowers of this handsome variety are large, and of good form and substance; colour bright orange, with the centre of the petals striped with white.

A. Beauté sans rival.—Flowers dark orange, beautifully mottled and veined with white; a most desirable variety.

A. Beauté sans pareille.—Flowers with a greenish centre, dark crimson petals, striped with white.

A. Brilliant.—A fine well-formed variety, with well-expanded flowers; colour a deep rich crimson, with a slight white stripe down the centre of each segment.

A. Charles Keiser.—A charming flower; rich bright crimson ground, with a broad band of pure white down the centre of each petal.

A. Cleopatra.—Flowers bright orange scarlet, shaded and veined with rich glossy crimson; of fine form, and without doubt one of the best.

A. Comet.—Flowers large, petals broad and of good substance, colour a rich clear crimson.

A. Comtesse de Montebello.—A flower of great beauty, the ground colour blush white, petals striped with purple and amaranth.

A. Dawsoni.—One of the finest variety in cultivation, being a great improvement on that well-known and superb sort *Ackermanni pulcherrima*. The colour is a vivid crimson, with a broad white band covering only a quarter of the length of the segments. The form is first-rate, the flower standing boldly out and expanding full and uniformly. In substance it is very marked, and remains in flower on that account in a cool airy temperature four weeks. It is a cross

between *Ackermanni* and *Johnsoni major*, and was raised by Mr. Anderson, at Meadow Bank, and named by him in honour of his employer.

A. Eldorado.—A very handsome variety; the ground colour is white, with purple stripes up the petals.

A. Emperor.—Bright crimson scarlet in colour, flowers very large and of good form.

A. Fire King.—Flower rather small, but colour excellent, bright scarlet, with a white star.

A. Graviana.—This variety has a very charming flower, of good size and substance, beautiful orange colour, with light stripe in the petals and a light base.

A. Hawkinsiana.—A very fine flower, of good size, form, and substance; the ground colour is bright carmine, handsomely streaked with green.

A. Helena.—Flowers of extra fine form, colour bright orange scarlet, shaded with crimson, medium size, and good expansion.

A. Henry Gibbs.—Flowers a fine carmine crimson, with white margin, and well-defined white central bar on each segment.

A. ignescens.—A very pretty variety, of free-flowering habit; the blooms are bright light scarlet in colour, with a white throat, which runs out in bars to the centre of the segments.

A. Impératrice du Brésil.—The bulbs of this plant are very distinct in shape; they are from one to two feet long, produced upwards into a long neck. The leaves are long; the flowers are formed of very narrow petals, of a pale violet colour; very distinct. Native of Brazil.

A. insignis.—Flowers large; petals very broad, and opening very flat, the points turning back when fully expanded; colour vivid scarlet, the centre of each petal striped with pure white.

A. International.—The petals of this variety are long; flower large and of good substance, light, with pink stripes.

A. Juliet.—Beautiful clear orange scarlet, delicately shaded with purplish crimson, and light throat.

A. Jupiter.—A superb variety, with large carmine scarlet flowers, which are striped with white, throat green.

A. La Beauté.—Of good substance and shape, white, striped with crimson.

A. Leopoldii.—A superb species, having very large flowers of a rich deep crimson, each segment being tipped with creamy white.

A. Loveliness.—A variety with good-shaped flowers, vermilion and white, the lower petals striped with white.

A. marmorata.—A very distinct and handsome variety, bearing four flowers on a spike; the petals are very long, light brown, mottled with a darker tint.

A. Matilda.—This is a charming flower, of good substance and average size; bright flesh-coloured ground, beautifully feathered with crimson.

A. Olivia.—Rich scarlet, shaded with crimson, and beautiful light throat.

A. Othello.—The blooms of this variety are very fine in form, glossy, and wholly of a rich dark crimson colour.

A. pardinum.—A magnificent species, of which, it seems, there are several varieties. All that we have seen are, however, distinct in form from that of any other *Amaryllis*. The blossoms are upwards of six inches in diameter, very spreading, with scarcely any tube; the ground colour of the flower is a rich cream, profusely dotted all over with crimson red. It is a native of Peru, and is a splendid acquisition to this beautiful genus.

A. Prince Arthur.—Beautifully-formed flowers of deep crimson, with a dark stripe traversing the centre of the petals.

A. Prince Teck.—Fine new varieties of this noble flower are continually making their appearance, testifying to the skill of the hybridiser. The present plant is certainly a good addition to this highly decorative family. The flowers are large, the ground colour being a soft creamy yellow, which runs down the centre of each petal; the edges of the petals are deep carmine crimson, and beautifully marked with netted lines of the same colour.

A. Princess Dagmar.—Petals of great breadth, margined and veined with carmine scarlet, and having a light base; one of the finest forms and most brilliant colour.

A. pyrrochroum.—Leaves fleshy, linear oblong; flowers of good size and substance, four or five on each scape, colour deep red, the throat shading to greenish yellow. A very handsome species. Native of Brazil.

A. Rembrandt.—A flower of superior form and substance; it is a rich dark crimson self in colour.

A. reticulata.—A very beautiful old species, by some called *A. striatifolia.* It is one of those fine bulbs that has long been neglected, but should be in every collection. The leaves are sword-shaped, dark green, with the mid-rib a pure ivory white; the flower scapes rise well above the leaves, each bearing five or six flowers, some three inches in diameter, and a beautiful soft pink and white, the veins being darker, and giving the whole flower a remarkable netted appearance.

A. Shirley Hibberd.—A fine large flower, and of good shape; petals long, rich crimson in colour, shading to lake, with white lines and greenish rays in the throat.

A. Unique.—This very handsome variety, of extra fine form, is one of our own hybrids. The petals are of good substance and very broad; the colour is a deep bright scarlet, the centre of the petals being shaded with black, and having white markings in the throat.

A. William Pitt.—Flowers bold and of good form, white, striped with vermilion; one of the most beautiful.

A. Williamsii.—Petals of great breadth and substance; ground colour carmine scarlet, beautifully feathered with rosy carmine, and having a broad band of white down the centre of each petal.

AMHERSTIA.

A genus belonging to the order *Leguminosæa*. It has been named in honour of Countess Amherst, and was flowered in this country, for the first time, in 1849, by Mrs. Lawrence, of Ealing, Middlesex. Though that fine example of *Amherstia* has now become a thing of the past, the plant is still to be seen in great beauty at Chatsworth, the seat of the Duke of Devonshire. Though exceedingly magnificent, having been called the glory of the Indian Flora, yet, on account of its size and the great heat it requires, the *Amherstia* cannot become general in cultivation, and its great beauty only has induced us to insert it here. The soil best adapted for *Amherstia* is good light fibrous loam, with a liberal addition of sand. After potting, the plants should be placed in a bottom heat of about 80°, and the temperature of the house should range from 85° to 90°; or, indeed, if the thermometer rises to 100°, the plants will like it all the better, provided the atmosphere is kept moist by frequent syringings, and well shaded, for it cannot stand exposure to the direct rays of the sun, especially while the leaves are in a young state. When the wood begins to ripen less shade is necessary, and the supply of water must be reduced; but it will not exist in a dry atmosphere, and, consequently, it must not be dried off to rest, under the supposition that it will be the means of causing it to put forth its gorgeous blooms.

A. nobilis. This is the only species of the genus yet dis-

covered. It is a large tree with pinnate leaves, and bearing long pendulous racemes of fine vermilion-coloured flowers, spotted with yellow; when in flower it is not surpassed by any plant known—indeed, so lovely is it considered by the Burmese, that handfuls of flowers are presented as offerings to Buddha.

Ancylogyne.

In this genus we have a representative of the large group *Acanthaceæ*, which contains an immense number of subjects of a highly decorative character, nearly all of which have been ruthlessly cast on one side by horticulturists. It is true but few of them are suitable for bouquets, as the flowers fall quickly after being cut, but numbers of them blossom through the dull winter months, and serve to make the houses cheerful and gay at that season, so that no collection of plants should be without a goodly number of kinds. They are of very easy culture, and many of them may be flowered in quite a small state; but as we shall have occasion to mention some of the best in their proper order, we will confine our remarks in this place to the genus now under consideration.

A. longiflora.—This lovely plant is a native of Guayaquil, and is, without doubt, a most valuable addition to our stoves. It is somewhat shrubby in habit, producing, from its four-angled stems, bright green leaves, ovate-oblong in shape, and about nine inches in length; the flowers are produced on the ends of the growths, in a long, drooping, branched panicle, each flower being about two inches long, and of a peculiar bright rich purple colour. The ease with which this plant may be grown, and its ornamental character, should recommend it to every lover of winter and early spring-flowering plants. It should be potted in a mixture

composed of equal parts peat and loam, with sufficient silver sand to make the whole feel gritty. A temperature ranging from 60° to 75° in summer, and from 55° to 65° in winter, will be found to suit it admirably.

ANTHURIUM.

A rather extensive genus of *Orontiaceæ*, chiefly valuable in our hothouses as foliage plants, the leaves being in many cases of large size, and of a bold and striking character, sometimes simple, and sometimes more or less lobed or divided. The spathe is usually green, and seldom to be regarded as an object of beauty, as it is in the species we here describe. These plants may be increased by divisions of the crowns and also by seeds.

A. Scherzerianum.—This very fine plant is somewhat remarkable amongst its fellows for its small size, and also for the brilliancy of its spathe. As will be seen from our frontispiece, it forms a compact dwarf-growing evergreen perennial plant, with leaves from twelve to eighteen inches in length, and two inches in breadth, oblong-lanceolate in shape, deep rich green in colour, and coriaceous in texture. The peduncles or flower stems spring from among the bases of the leaf stalks, and are bright red in colour, terminated by a brilliant and intense scarlet ovate-oblong spathe, about three inches in length, and nearly two inches in breadth; the spadix is orange-coloured. The beautiful contrast afforded by the deep green leaves and bright scarlet spathe must be seen to be thoroughly appreciated. It is a splendid exhibition plant, and on account of its leathery texture it will stand uninjured in a cool house during summer, and will continue in beauty for a period of four months at least. It is a plant of easy culture, requiring good drainage, and to be potted in rough fibrous peat and sphagnum moss. While growing,

it luxuriates in a high temperature and a moist atmosphere, and requires a good supply of water at the roots, but during the time it is in bloom less water should be given, especially if it be placed in a cool house. This gem, which is a native of Costa Rica, should find a place in every plant collection.

A. Scherzerianum var. Dixonii.—This is a variety of the preceding, which has originated in our stoves from cultivation, but I am totally unaware how or by what means it has come about. It would almost appear to prove a tendency on the part of the plant to produce double flowers, for the peculiarity of the variety is, that, in addition to the large spathe of the species, a second but smaller one is developed opposite it, which has the effect of increasing the amount of colour on a specimen.

Aphelandra.

Amongst the *Acanthaceæ* we shall find many gay plants, highly valuable for winter decoration; but the members of the present genus will be found eminently so, their bright and conspicuous flowers rendering them very effective for grouping, and also for the adornment of the dinner-table. They are free growing, yet they require considerable attention, in order to secure handsome bushes. We grow them in a mixture of two parts light loam, one part peat, and one part sand, and place them in a temperature of from 65° to 75°, giving them good drainage, and an abundant supply of water until the flower buds appear. After flowering they are kept cooler, and as dry as possible without inducing shrivelling. At the time of starting into growth, they should be cut back to within two or three buds of the old wood, or the plants will become naked and ill-formed; and care must be taken to keep them free from scale and mealy bug, which

are their great enemies, and attack them so violently as often to spoil both leaves and flowers for the entire season. The time for starting will of course depend upon the season the bloom is required, but, as a rule, they take a short time to grow and perfect their inflorescence. Cuttings of the half-ripened wood, inserted in a cutting-pot, and placed in a close frame or under a bell-glass, will strike freely.

A. aurantiaca.—A beautiful winter-flowering species, with broad, opposite, dark green ovate leaves, somewhat wavy at the edge. The flowers are produced in erect terminal spikes, and are of a deep orange scarlet colour. It is a native of Mexico.

A. cristata.—This fine old species is very useful for autumn flowering. The leaves are large, broadly ovate, and tapering to a point. The flowers grow in terminal spikes, and are of a rich bright scarlet colour. It may be had in bloom from August to November, or even later. Native of the West Indies.

A. nitens.—This is a magnificent species, of recent introduction from Guayaquil, and flowered in this country in May. It grows between two and three feet high. The leaves are opposite, about six inches long, ovate, and very bright shining dark green in colour, while the erect terminal flower spikes are four-angled, and the individual flowers are very large, and of a very bright scarlet colour.

A. Roezli.—This is perhaps at once the most beautiful and the freest flowering kind of the whole genus, and being a winter bloomer its value is considerably enhanced. The leaves are opposite, oblong, dark green, shaded with a silvery hue between the primary veins. It produces large, terminal, dense spikes of bright orange scarlet flowers. A most desirable plant. Native of Mexico.

A. Liboniana.—A very fine plant, growing about two

feet in height, and having leaves about six inches long, somewhat ovate-lanceolate in shape, dark green in colour, with a white stripe down the centre. The flower spike is about six inches long, the large bracts arranged in four rows, and of a rich bright orange colour, the flowers yellow, scarlet at the points. A very ornamental species, blooming in the spring months. Native of Brazil.

A. variegata.—A very handsome plant, and though not so grand as the preceding, yet very desirable as a winter-flowering species. The leaves are ovate-lanceolate, and tapering to a point, dark green, with white veins. The flower spike is six inches long, the bracts bright orange red, and the flowers yellow. It blooms very freely, and is well deserving cultivation. Native of Brazil.

Beaumontia.

A genus belonging to the order Apocynaceæ. The majority of the species known are climbing plants; but the one introduced here forms a large robust shrub, and should be grown in all extensive collections of stove plants. It requires the temperature of an ordinary stove. The soil should be potted in a mixture of two parts rich loam and one part peat, with the addition of a little sand. Beaumontias may be propagated from cuttings, the best being those having a slight heel of old wood, and also by seeds when these are obtainable.

B. grandiflora.—This is a grand plant, but one that is seldom seen; it is robust in habit of growth, the leaves being oblong-lanceolate, some eight inches long by three inches broad, dark green on the upper side, paler below; the flowers are pure white, large, and trumpet-shaped. Native of East Indies.

BEGONIA.

A very extensive family, and one that contains some beautiful plants, which are useful both for the decoration of the hothouse in winter, or for cutting for bouquet-making, or the decoration of the dinner table. We shall confine our remarks entirely to the best of the flowering species and varieties, and omit the ornamental-leaved kinds which have so largely contributed towards the decoration of our houses and gardens within the last few years, although many of these are very beautiful when in bloom. Their foliage is, however, their greatest attraction; and we omit them, not because we consider them unworthy of cultivation, but because this work is devoted to flowering plants only.

Begonias are very suitable for those who have but a limited command of heat, for the temperature of an intermediate house will suit them best, and during the winter, and whilst in bloom, they may be kept in a house in which the temperature is kept at from 50° to 55°. They grow well if potted in a compost of peat, loam, and thoroughly decomposed manure, in equal parts, with a small quantity of silver sand added, and they may be kept in a small state with great ease; but if fine specimens are required, they should be encouraged by frequent shiftings as the pots become filled with roots. When they are past flowering let them be cut down, the old soil shaken from the roots, and the plants repotted in smaller pots, so as to allow of being shifted and grown on for the next season's blooming. These plants are exceedingly easy of increase, which may be effected either by cuttings, or seeds; in the latter way many new kinds may be obtained, especially if several species or varieties are in bloom in the house at the same time. Looked upon in

the light of exhibition plants, but few even of the best of the flowering species and varieties of *Begonia* would be thought admissible; but these plants are thoroughly appreciated in the dull, dreary months of winter, when they so beautifully enliven our plant houses and dwelling rooms with their varied hues and graceful flowers, as well as delight our senses with their delicate fragrance. Many of them are well suited for growing in baskets, and if the species with creeping stems are selected for this purpose they will form beautiful objects.

The *Begonias* are found widely distributed over the world. In the East Indies they are found from the low grounds, up the mountains to the region of slight frost and snow; several species are found at the Cape of Good Hope, where they frequently become tuberous-rooted; and the genus is very common in the West Indian Islands, in Mexico, and throughout the greater portion of the South American continent, in some instances attaining great elevations.

B. albo-coccinea.—A dwarf species, with creeping stems, thick, fleshy, peltate, dark green leaves, and scarlet and white flowers, borne on erect panicles. Native of the East Indies.

B. Boliviensis.—A very desirable and distinct species, with tuberous roots, and annual stems, growing sometimes two feet in height; the leaves are light green in colour, while the flowers, which are large, especially the males, are pendulous, and of a bright shining vermilion red, and very distinct from any other species in cultivation. Several of the species from the cooler parts of South America have tuberous roots, and die down annually, therefore care must be exercised with these during their period of rest. Native of Bolivia.

B. carminata.—This is a garden hybrid, with tuberous roots; the leaves are narrow, ovate-acuminate, dark green, tinged with a bronzy hue, the flowers are large, most freely

A CHELSONII.

EN VARIETY.

produced, rosy-salmon in colour. A handsome and profuse bloomer.

B. Chelsoni.—A splendid acquisition to our winter flowering *Begonias*; it is a garden hybrid, the result of a crop between *B. Sedenii* and *B. Boliviense*. This plant is well deserving a place in every collection of cool stove plants; it is of good habit and very free in growth, leaves oblique-ovate-lanceolate, irregularly lobed and dark green flowers, large, drooping, bright shining orange, shaded with deep red. It continues in bloom during the whole of the winter.

B. Chambersii.—A most interesting garden hybrid, produced between *B. Pearcei* and *B. Sedenii*, succeeding well in a greenhouse during summer, and having tuberous roots; it retains to a great extent the markings of the first-named parent, but the leaves are large and more oblique, flowers very large, rosy-salmon within, and pink without. It is a profuse bloomer.

B. cinnabarina.—A very handsome species, and one that blooms in great profusion, the large, bright orange-coloured flowers forming a beautiful contrast with the deep green leaves; these latter are about six inches long, obliquely ovate, and serrated at the margins; the large panicles of flowers are produced in the spring and summer months. Native of Bolivia.

B. crassicaulis.—A pretty creeping species. The leaves are palmate; the flower is white, tinged with pink, and freely produced during the first three months of the year. Native of Guatemala.

B. Digswelliensis.—A remarkably free-flowering and charming variety, which is very effective for the decoration of the dinner table, or for any situation where ornamental plants are required; it is of dwarf habit. The flowers are of a light pink, and the edges of the petals being deeper, and when

contrasted with the deep rich colour of the young buds, they have a very beautiful appearance. It is a valuable kind also for cutting for bouquets, and should be in every collection. Garden hybrid.

B. dipetala.—A very distinct and free-flowering species. It is of erect growth, with oblique cordate leaves, serrated at the edges and tapering to a sharp point, slightly hairy upon the upper side, and dark green; and the flowers are borne in pendulous flat panicles, of a delicate rose colour, and are produced through the whole of the winter and spring. Native of the East Indies.

B. Dregei.—This is a dwarf-growing tuberous-rooted species, and almost a perpetual bloomer; it is very frequently called *B. parvifolia*. The leaves are small, and dark green, and the flowers pure white. Native of the Cape of Good Hope.

B. erecta multiflora.—A distinct and handsome variety, with oblique, dark, bronze-coloured leaves, which contrast beautifully with the bright reddish pink flowers; its flowers are produced freely nearly all the year, but especially in winter.

B. falcifolia.—A charming winter-flowering species, growing from one to two feet high, with smooth round branching stems. The leaves are about six inches long, and two inches wide, falcate-lanceolate in shape, narrowing to the tip, of a deep rich green on the upper surface, and in the young state spotted with white; the under surface is deep reddish purple. The flowers are rose pink, in short axillary panicles. Native of Peru.

B. foliosa.—A very pretty species, admirably adapted for hanging baskets. The leaves are small, somewhat ovate or oblong, obliquely cordate at the base, about an inch or more long, dark green, and closely arranged on

each side of the stem; the flowers are white, tinged with pink, small, but produced most abundantly. It blooms all through the winter. Native of New Grenada.

B. fuchsioides.—A most elegant plant, which can be grown into handsome little specimens for the decoration of the dinner table. The leaves are small, oblong oblique, dark green, and the flowers, which are produced in abundant drooping cymes, are of a bright scarlet colour. This is an old species, yet still one of the most beautiful, and no collection of plants should lack this gem amongst gems. Native of New Grenada.

B. geranioides.—This is a dwarf and very elegant plant, growing about a foot and a half high. The leaves spring all from the roots, and are somewhat reniform, slightly lobed, five or six inches across, and deep green on the upper surface, the leaf stalks red and clothed with hairs. The flower stems are three-branched, bearing quantities of large pure white flowers, the bright yellow stamens and stigma affording a pleasant contrast; it blooms during early spring. Native of Natal.

B. glandulifera.—A handsome species, which does not form a stem. The leaves are obliquely ovate-cordate, about five inches long, pointed, finely serrated at the edges, slightly hairy, and of a bright dark green; the flower scapes are about a foot high, hairy, and bearing a branched panicle of pure white flowers, which contrast prettily with the orange yellow stamens; it blooms during the whole winter. Native of Trinidad.

B. guatemalense.—A free-growing and highly decorative species, with dark green oblique leaves, and good-sized trusses of deep flesh-coloured flowers, which are produced during winter.

B. heracleifolia nigricans.—A very handsome plant, both

in foliage and flower. It has a creeping stem, and palmate leaves; the lobes, which are broadly lanceolate-acuminate, are hairy at the edges, the upper surface of a dark green, broadly margined with black. The flowers are borne on erect panicles, in great profusion, during winter, and are white, beautifully stained with rose. Native of Mexico.

B. hybrida floribunda.—A very free-flowering kind, yielding a profusion of its bright rose-coloured flowers during the whole winter. It is a hybrid between *B. fuchsioides* and *B. multiflora*, and is of Continental origin.

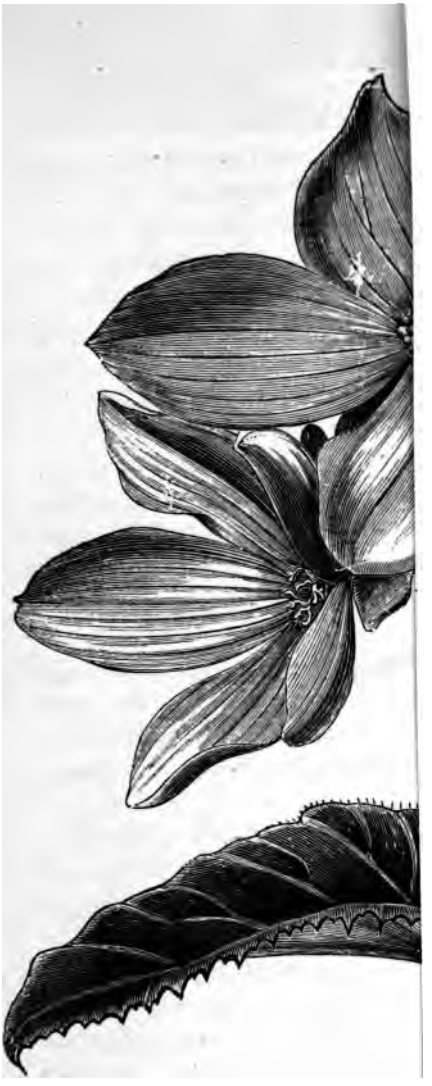
B. hydrocotylifolia.—A distinct dwarf species, with the stems creeping, and the leaves nearly round, prettily veined with black; the flowers are pink, and freely produced on upright scapes, in branching panicles; it is a continuous bloomer throughout the winter. Native of Brazil.

B. hydrocotylifolia manicata.—In this plant the stems are creeping, and the leaves large, peltate, dark green above, and red beneath. It produces, through the winter months, erect branching scapes of large pink flowers. A very handsome garden hybrid.

B. Ingrami.—A handsome garden hybrid. The leaves are three or four inches long, oblique, and bright dark green; the flowers are produced in drooping clusters, and are of a light pink colour.

B. intermedia.—This is also a garden hybrid, the result of a cross between *B. Veitchii* and *B. Boliviense*. In habit it may be said to be intermediate, and is very robust and sturdy in growth; it is an abundant bloomer, producing large flowers of a rich vermilion red, which render it at once effective and ornamental. It may be grown in a cool stove.

B. Kunthiana.—This fine species is a native of Venezuela.



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It is very free-flowering, the flowers being large, and pure white. The leaves are unequally oblong-lanceolate in shape, of a rich shining dark green above, and bright reddish crimson below, which contrasts beautifully with the flowers.

B. laciniata.—This very fine species has thick green downy stems about two feet high, and obliquely cordate smooth and dark green leaves, about six inches long, cut into segments, the centre blackish purple, and the segments margined with the same colour; the flowers are very large, pure white on the outside, clothed with bright red hairs. The fine flowers and variegated leaves make this species a great favourite, and as it is, like so many of the genus, a winter bloomer, it is doubly valuable. Native of Nepal.

B. lætevirens.—Stems erect, with large dark green peltate leaves; flowers in large trusses, pinkish white in colour. The blooms are produced in abundance in mid-winter.

B. Lapeyrousii.—A beautiful erect-growing species, with light flesh-coloured flowers, produced in compact, erect trusses. This is a stout, compact plant; it cannot fail to please even the most fastidious taste, and should be grown to a much greater extent than it hitherto has been. It blooms during the whole of winter and spring. Native of South America.

B. longipes.—This species is a robust-growing plant, with large clusters of pure white flowers; they are small individually, but very handsome in the mass, and as it blooms nearly all winter and spring is highly desirable. Native of Mexico and Brazil.

B. longipila.—An erect-growing species, with deeply laciniated leaves, and dense trusses of large pink flowers, which are produced from January to May. Native of Mexico.

B. manicata.—A fine old species, with short, erect, fleshy stems, and large oblique leaves, the footstalks of which bear pretty bright red frill-like fringes; the flowers are of a light pink, produced in large, erect, branching panicles, continuing in full beauty for several months. Native of Brazil.

B. Martiana.—A beautiful tuberous-rooted species, producing erect, annual, scarcely branched stems, bearing ovate-acute coarsely-serrated leaves, with a profusion of bulbils in their axils; the flowers are very large, bright rose pink, borne one or two together in the upper leaf axils. Native of Mexico.

B. Meyeri.—A fine erect, strong-growing kind, with the oblique leaves as well as the stems thickly clothed with short, soft, light brown hairs; the flowers are large, pure white, and very handsome, continuing in bloom from January to May. Native of Brazil.

B. microptera.—The stems of this species are about eighteen inches high, and the leaves about six inches long, ovate-lanceolate, subfalcate, unequal sided, sharp pointed, deeply serrate, dark bright green on the upper side, with a deep red spot at the base, the under side paler, with bright red veins; the terminal trusses of flowers are white, suffused with pink. It is very useful for cutting, and, like so many of this genus, is an object of great beauty in mid-winter. Native of Borneo.

B. nitida.—A soft, free-growing species, with small, dark, bright green leaves, and large trusses of pure white flowers, which are admirably adapted for bouquet making; it blooms during winter. Native of Jamaica.

B. odorata.—A free-growing kind, with erect stems, which are clothed with rich dark green leaves, contrasting beautifully with its terminal clusters of pure white sweet-scented

flowers, which continue in succession from January to April. Introduced from South America.

B. Pearcei.—This beautiful little plant should find a place in every stove. It is a dwarf grower, of deciduous habit, producing large bright yellow flowers very freely; these contrast beautifully with the rich dark velvety green of the upper surface of the leaves, which are, on the under side, of a pale red, prettily veined with light green. It is a native of La Paz, and was sent home by Mr. Pearce, whose name it bears.

B. phyllomanica.—This ornamental and very distinct plant is indebted for its name to the profusion of little leaflets which clothe the stem and branches, and which, if detached and placed upon the ground in a moist warm place, produce plants. The leaves are dark green, unequally cordate-ovate, subpeltate, tapering to a point, and deeply lobed; the edges of the leaves, the leaf stalks, and the stems clothed with stiff hairs. The flowers are large, produced in pendulous trusses, white, delicately tinged with pink. It continues blooming through winter and spring. Native of Guatemala.

B. Prestoniensis.—A beautiful garden hybrid, of neat branched habit, with smooth reddish stems, obliquely ovate-acuminate leaves, which are sinuately lobed and serrated, and brilliant orange scarlet sweet-scented flowers, which come in drooping cymes from the leaf axils. It is a very profuse bloomer, producing its blossoms in the autumn and winter seasons.

B. rosæflora.—A fine species, very much resembling *B. Veitchii* in general appearance, and, like it, a native of the mountain regions of Peru. It is a tuberous-rooted kind; with the leaves, which are supported upon stout red foot-stalks, somewhat broader and rounder than in that species, whilst the surface is more uneven and of a light green

colour; the flowers are large, borne upon upright scapes, and of a rich rosy red.

B. semperflorens.—This is a most useful species, as it continues to flower through the whole winter and spring, and can be grown into very handsome little plants for the decoration of the dinner table. The leaves are succulent, round-ovate, slightly serrate on the edges, of a shining bright green, the flowers are pure white, and produced in great abundance. Native of Brazil.

B. stigmosa.—A distinct and pretty old species, of dwarf habit, with light green spotted leaves, and large clusters of beautiful white and pink flowers, which are produced through the winter months. Native of Central America.

B. Sutherlandi.—A very pretty tuberous-rooted kind, growing from one to two feet high, with the slender stems and branches of a deep red, and the leaves, about six inches long, obliquely ovate-lanceolate in shape, lobed and serrate at the margins, bright green on the upper surface, and paler, veined with red, below; the flowers are of moderate size, of a coppery red in colour, freely produced in spring and early summer. Native of Natal, at considerable elevation.

B. Sedenii.—In this plant we have one of the most profuse and continuous bloomers we ever grew; it is of compact habit, with bright dark green leaves, the flowers are large, and bright magenta in colour. It is a tuberous-rooted plant that looses its leaves, and lies dormant during a portion of the year. A garden hybrid.

B. ulmifolia.—A very free-growing species, with branching stems and dark green ovate leaves, producing, throughout the winter, an abundance of trusses of rosy pink flowers. Native of South America.

B. urophylla.—A stemless species, producing large fleshy,

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glaucous, ovate-acute lobed leaves, and dichotomous branched panicles of great size, bearing large pure white flowers; it blooms during the whole winter. Its origin is not known.

B. Veitchii.—This is one of the finest species of *Begonia* in cultivation. The roots are tuberous, and the plant might almost be called stemless, so little is that part developed; the leaves stand upon short footstalks, and are nearly round, or ovate-cordate, about five inches in diameter, thick in texture, and of a rich dark green colour, the margins being red; the flower scapes are eight inches or more in height, and bear rich vermilion red flowers upwards of two inches in diameter, and deliciously scented. This floral gem, which must be universally admired, is a native of Cuzco, in Peru, and having been found at some 12,000 feet altitude, it is said to be hardy in many parts of England.

B. Verschaffeltii.—A very handsome free-flowering garden hybrid. The leaves are of a rich dark green, unequally lobed, hairy on the under side and at the edges; flowers bright pink, and produced in large panicles.

B. vitifolia.—An erect-growing species, with bright green, oblique, vine-like leaves, and an abundance of white flowers, tinged with pink. Native of Brazil.

B. Wageneriana.—This is a very free-flowering species, growing about two feet or more high. The leaves are cordate-ovate, subpeltate, and slightly lobed, and, together with the stems, are of a uniform pale green, except the under side of the young leaves, which are tinged with purple. The clusters of flowers are mostly of one sex, either male or female, the former pure white, and useful for bouquet making, the latter much larger, and pale green, with a conspicuous orange-coloured twisted stigma; they are abundantly produced during winter and spring. It comes from Venezuela.

B. Weltoniensis.—One of the most charming of the whole

family, and admirably suitable for general cultivation as a decorative plant. It is of dwarf, compact habit, with foliage, in form, size, and colour, much resembling that of *B. Dregei*, one of its parents, and it bears, throughout the spring months, a profusion of rich pink blossoms of the most attractive character. Of garden origin.

Bougainvillæa.

Probably this is the most showy genus of stove-climbing plants in cultivation, though until quite recently the means of developing this beauty seemed to be shrouded in mystery. The gorgeousness of these plants, when covered with their splendid bracts, is such as to render it impossible for the finest figure or the most elaborate description to do them justice. They are nearly all of strong-growing habit, and soon cover a great space; therefore, those which are planted out should have but a very small space allowed for their roots, and during the winter must be kept as completely at rest as possible—indeed, they almost require drying off. *B. glabra* is the only one that at present has been satisfactorily managed as a pot specimen. It requires thorough resting in the cool end of the stove during winter, and must be pruned early in the spring, and started in a brisk heat, when it will soon begin to push forth its beautiful bracts, to which, and not the flowers, these plants owe their attraction. They should be potted in good turfy, sandy loam, and may be increased readily by cuttings of half-ripened wood inserted in a brisk bottom heat.

B. glabra.—This species has now become a general favourite, and is frequently to be met with at our horticultural exhibitions. It is neat and compact in habit of growth, requiring of course proper training, and has bright green smooth leaves, and a panicled inflorescence, smaller

than that of *B. speciosa*, each branchlet bearing a triplet of cordate-ovate acute rosy bracts, while the flowers are a light straw colour. It is more useful for general purposes than the next species, as it is not only a very free-blooming plant, but it continues blooming all through the summer months, producing an abundance of its glorious floral bracts upon every little shoot. Native of South America.

B. speciosa.—This plant is much stronger and larger in all its parts than the foregoing. The stems are branched, and abundantly furnished with large recurved spines, and, as well as the ovate leaves, are pubescent; it bears immense panicles of large cordate bracts of a delicate lilac rose, shrouding the whole plant in a mass of lovely colouring, such as cannot be adequately described. This plant should be planted out, and may be several years before it flowers; but when it does blossom it will then continue to do so, and will amply repay for lost time. It is a grand climber for a stove conservatory. Native of Brazil.

BROMELIACEOUS PLANTS.

Under this head we include the following genera:—*Æchmea*, *Billbergia*, *Bromelia*, *Encholirion*, *Guzmannia*, *Nidularium*, *Tillandsia*, *Pepinia*, *Puya*, and *Vriesia*, which consist of plants very similar in habit, appearance, and general characters, all requiring the same treatment. We have therefore considered it more convenient to treat of them as one group. Their leaves are produced in a rosulate manner, and many of them in consequence form beautiful vase-like plants, very suitable for table decoration. Their

beauty is generally of a very lasting character, for consisting, as it does in many cases, partly of coloured bracts of firm enduring texture, and partly of the varied colouring of the leaves, they remain in full perfection for many months. Many of the species are epiphytal, growing in their native countries in the forks of the forest trees, and clothing the branches in company with many other plants, such as ferns, orchids, and aroids. Hence the smaller kinds will be found to succeed best if fastened to a block of wood and suspended from the roof, receiving the same treatment as an orchid in a similar situation; if grown in pots, light fibrous peat should be used for these.

The stronger growers, however, should be potted in a compost consisting of a mixture of light loam, peat, sand, and a little leaf mould. On account of their rosulate growth, and the way in which the bases of the leaves overlap each other, the centre of the plants is hollow, and capable of holding water, and they are much benefited by having it supplied to them in this way during the growing season. These plants are of easy growth, and many of them are well suited for planting in pockets in the walls of a fern house, others for growing in baskets to be suspended; indeed, they may be made to occupy almost any place in a warm house. They may be increased by dividing the suckers from the parent stem, and also by seed, when this can be obtained.

Æchmea.

Æ. discolor.—This, although an old inhabitant of our stoves, is not by any means so generally grown as it deserves; the leaves are broad, recurved and smooth at the edges, the upper side being deep green, whilst the reverse side is stained with a vinous purple; the panicle, which appears about

ÆCHMEA MARIÆ REGINÆ.

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August, is branched, and deep coral red; the flowers, which are destitute of bracts, are of the same brilliant colour, and tipped with blue and black, thus presenting a great resemblance to the seeds of *Abrus precatorius*. It continues a long time in perfection, and should be in every collection.

Æ. distichantha.—This species has long glaucous linear-oblong leaves, tapering to a sharp point, and distinctly armed with reddish brown spines. The flower spike is densely clothed with bright red bracts, from which the blooms protrude, the sepals are rose colour, and the petals are bright purple. It is a very handsome plant, and should be grown in every collection of these plants. Native of Brazil.

Æ. fulgens.—A beautiful species, producing its brilliant scarlet bracts and blue flowers in great abundance during August and September. Native of Cayenne.

Æ. glomerata.—A handsome and distinct plant, with fine, large, dull green leaves, about one and a half feet long, broad and rounded at the point; the margins armed with short, wide-set, black spines. The scape is erect, stout, and from eight to ten inches high, bearing a profusion of bright blood red coloured bracts, studded with deep blue flowers. A very effective plant, and well deserving cultivation. Native of Brazil.

Æ. Mariæ Reginæ.—This is without doubt the finest Bromeliad yet introduced to cultivation. It is robust in habit, the leaves are arranged in a vase-like manner, measure from twelve to eighteen inches in length; they are armed at the edges with sharp spines and dark green on the upper side, but paler below; the scape is erect, and is clothed about two-thirds of its length with large, oblong, boat-shaped bracts of a rich magenta, shaded with rose, and which remain for two months in full perfection; the upper portion is thickly studded with flowers, which are tipped with dark blue, changing with

age to rose. It blooms during June and July. Native of Costa Rica.

Æ. Melinoni.—A very handsome species, producing a large panicle of bright scarlet flowers, tipped with pink; the leaves are radical, about eighteen inches in length, leathery in texture, and of a uniform dark green colour, armed with spines at the margins. Native of South America.

Æ. Weilbachii.—A fine species, with strap-shaped leaves, which are broad and sheathing at the base; the flowers are in panicles, with the lobes of the calyx deep blue, the petals flesh-coloured, while the stem and bracts are of a bright scarlet. Native of Brazil.

Billbergia.

B. Baraquiniana.—A noble, erect-growing species, attaining about a foot and a-half in height. The leaves are strap-shaped, tapering to a point, where, as well as at the edges, they are armed with sharp reddish spines; they are sheathing at the base, but recurved at the apex, and the colour is bright green, transversely variegated with white scurfy bars. The spikes of flower are long, rising from the centre, the upper portion pendulous, bearing four or five large, oblong-lanceolate, bright scarlet bracts at the base of the flowers, which are green, as also are the stamens and pistils, which are very much elongated; the stem above the bracts is hoary white. A very showy plant, blooming in early spring. Native of the Amazon.

B. marmorata.—This is a very fine, erect-growing species, with the leaves broadly strap-shaped, sheathing at the base, truncate-mucronate at the apex, and very regularly toothed at the edges; their colour is a deep green, freely blotched and barred with dull reddish brown. The panicles are erect,

branched, much longer than the leaves, and supporting deep blue flowers, having the calyces green, tipped with blue. The principal attraction of the plant, however, resides in its very large, leafy, oblong bracts, which, as well as the stems, are bright scarlet. Native of Brazil.

B. miniata-rosea.—This handsome species has numerous erect, slightly spreading, and recurved greenish white leaves, spiny at the margins; flower scape erect and fleshy white; flowers numerous, rosy red in colour; bracts large, oblong-lanceolate, red, slightly tinged with blue, and clothed with a mealy farina. Native of Brazil.

B. Morreliana.—A magnificent plant, the leaves of which are ligulate in shape, banded with white, and armed at the base with a few spines. The racemes are about a foot long, and thickly set with the beautiful bracts and flowers, the former bright rose colour, the latter deep violet. When grown as a basket plant it produces a brilliant effect. Native of Brazil.

B. sphacelata.—The leaves of this fine species form a splendid crown, and are from three to four feet long. The flowers are freely produced, rosy red in colour; and the bracts are large, tinged with green. Native of Chili.

B. thyrsoidea.—This very beautiful species is in habit like an ordinary Queen Pine; the leaves, however, are not glaucous, but of a clear light green. Both the bracts and flowers are of a deep rich crimson in colour. Native of Rio Janeiro.

BROMELIA.

B. longifolia.—A very fine species, with leaves from one and a-half to two feet long, narrow, armed with long spines, white on the under surface, and greyish green on the upper. The flowers are produced in a dense head, and are of a

bright rich rose colour; the bracts at the base spiny and bright crimson. It blooms in July and August. Native of Guiana.

Encholirion.

E. corallinum.—This is a superb plant of recent introduction. It is vase-like in habit, the leaves sheathing at the base, becoming recurved at the apex; the colour is dark green on the upper side, dull purple below, with a glaucous tinge spreading over all; the spike is erect, bearing upon the upper part a distichous scape of boat-shaped crimson bracts, from which issue large yellow flowers, which are tinged with green. It is a conspicuous and beautiful plant. Native of Brazil.

Guzmannia.

G. tricolor.—A very handsome species, well deserving general cultivation. It is rosulate in growth, producing broad linear sword-shaped involute leaves, which are concave, and sheathing at the base, about eighteen inches long, and rich green in colour. The flower scape is erect, from one to two feet long, clothed with numerous bracts of a bright pale yellow green, beautifully streaked with blackish purple towards the top, tipped with red, and at the extreme point rich scarlet; the flowers are pure white, and are produced throughout the summer. Native of St. Domingo, Jamaica, Peru, &c.

Hoplophytum.

H. calyculatum.—A very distinct and beautiful member of this family. The leaves are strap-shaped, and at the ends have the appearance of being cut off, but armed with a sharp spine; the flowers are tubular and bright yellow, borne

in close roundish heads at the top of an erect scape. Native of Brazil.

Nidularium.

N. Innocenti.—This species has large lanceolate leaves, with the margins prettily serrated, the upper surface deep green, and the under side deep red or purple. The flowers are bright orange red, very handsome, and continue in perfection for several months. Native of Brazil.

N. Laurentii.—A very handsome plant. The leaves are ligulate, recurved, suddenly acuminate at the point, and disposed in a rosulate manner; towards the base they are white, green upwards, and spotted with dark brown dots, the outside leaves being wholly green. The flowers grow upon short heads, and are pale blue in colour. Native of South America.

Pepinia.

P. aphelandræflora.—This plant is thoroughly distinct from any other Bromeliad with which we are acquainted; in general habit it resembles *Dracæna gracilis*, but the leaves are dark bright green, pointed and arranged in a rosulate manner; it blooms when about nine inches in height, the flowers being borne in large, erect terminal clusters, resembling somewhat the inflorescence of an *Aphelandra*, hence the name; the petals and tube are bright scarlet, whilst the exserted stamens are yellow. Native of Peru.

Puya.

P. Warscewiczii.—A very beautiful plant, attaining the height of two or three feet. The leaves are radical, with the margins rolled in, and furnished with black spines, and the blade of the leaf expanding, so as to become lanceolate

in shape, tapering to a point; it is altogether two feet or more in length, and of a rich dark green. The flower spike is large, dense, oblong, furnished with large, deep, blood red bracts, from between which the pale yellow flowers protrude, affording a beautiful contrast of colours. It blooms during the early autumn months. Native of Guatemala.

Tillandsia.

T. argentea.—A very novel-looking plant, with elegant recurved leaves, covered with fine white hairs, giving it a beautiful frosted silvery appearance. It is said to produce very handsome flowers, but these we have not seen.

T. Lindenii.—A superb species; the leaves are arranged in a rosulate manner, broad and sheathing at the base, tapering upwards and ending in a fine point, beautifully recurved, light green on the upper side, suffused with rose below, and streaked with parallel lines of reddish brown. It bears a handsome broad distichous scape, which is rosy carmine, and the large flowers vivid azure blue, with a pure white eye. This plant should be grown in every stove. Native of Peru.

T. Lindenii major.—This is a rather stronger growing plant than the preceding, and produces a large spathe and flowers; the colour the same. Native of Peru.

T. pulchella.—This is another beautiful plant belonging to the Bromeliaceous order. The leaves are about six inches long, subulate, erect, dark green, but clothed with a white farinose substance; the scape is erect, longer than the leaves, and clothed from base to point with large bright red bracts, from which the white flowers protrude. It blooms during winter, and forms a splendid object if several plants are grown together on a block of wood, or in a basket. Native of Trinidad.

T. recurvifolia.—A beautiful dwarf compact-growing

TILLANDSIA LINDENII.

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species, forming dense tufts of very glaucous leaves, which are about four inches long, lanceolate-subulate in shape, sheathing at the base, plain at the edges, and sharp pointed at the apex; the flower spike is short ovate, the bracts large, bright rosy pink, and the flowers pure white. A very handsome little plant, which should be grown in a small basket or on a block of wood. It blooms during winter. Native of Panama.

T. stricta.—This pretty species has sheathing ligulate leaves about six inches long, and half-an-inch broad at the base, covered with a scurfy white substance. The flower spike is eight or nine inches high, clothed with ample ovate white bracts, delicately tinged with rose; the calyx is rosy white, and the corolla a deep violet when first open, changing to red with age. It blooms during the winter months. Native of Brazil.

T. xiphioides.—This, though not a very showy plant, is valuable on account of its deliciously-scented flowers. The leaves are rosulate, about six inches long, and half-an-inch broad at the base, clothed with silvery grey woolly hairs; the flowers are borne upon spikes about six inches long, and are pure white. It succeeds well grown upon a block of wood or piece of cork. Native of South America.

Vriesia.

V. brachystachys.—An exceedingly handsome species of dwarf habit of growth; the leaves are light green, sheathing, and arranged in a rosulate manner; the spike rises from the centre, furnished towards the top with numerous distichous bracts, which are crimson at the base, with the upper portion dark green; the flowers are also crimson at the base, orange yellow in the centre and tipped with black, a combination of colours which at once render it very attractive and very

ornamental, and as it remains in full beauty for a lengthened period, it deserves the attention of all plant growers. It is a native of South America.

V. speciosa.—This beautiful old stove plant has been far too much neglected. The habit of growth is rosulate, the leaves being from ten to eighteen inches long, strap-shaped, and sheathing at the base, slightly curving outwards at the apex; their colour is a rich dark green, transversely banded with black on the under side, the dark colour being faintly perceptible also on the upper surface. The scape rises from the centre, and is flat, sword-shaped, a foot or more long, clothed with closely imbricated bright scarlet bracts, from which the white flowers protrude. The scape remains in full beauty all the winter. Native of South America.

Brownea.

A genus of leguminous trees nearly allied to *Amherstia*, and growing from six to twelve or eighteen feet high. They are very ornamental, and should be grown wherever room can be afforded them. The leaves are abruptly pinnate, bearing usually three or four pairs of leaflets, but in some species more. The young growths, being somewhat weak, are pendulous, and have the edges of the leaves rolled back. All the known species are magnificent when in bloom, and are well deserving more general cultivation. They succeed well if potted in a mixture of loam, peat, and sand, and placed in a summer temperature ranging from 65° to 85°. In winter a somewhat lower temperature will be better for them, and they then require very careful applications of water, for though the plants will not endure complete dryness at the roots, yet a too liberal supply of water in winter is nearly certain to kill them. These plants

may be increased by cuttings, the ripe wood being selected; they require strong heat to induce them to root, and they are not free at any time. When seeds can be obtained they may be placed in good heat, but water must be applied very sparingly, or the seeds will rot.

B. Ariza.—This very fine plant, which is nearly allied to *B. Grandiceps*, grows from twenty to forty feet high in Bogota, where it is found at an elevation of 14,000 feet. The leaves are dark green, pinnate, usually with six or eight pairs of pinnæ, which are oblong-lanceolate, and sharply tapered to a point. The flowers are of the richest scarlet, and produced in a dense globular head of immense size. This plant requires a large house to display its beauty, but where such accommodation can be provided, it is well deserving every care. It blooms during the summer months.

B. Birschellii.—At present this fine species is exceedingly rare. In its native habitat it attains a height of twenty feet, forming a noble tree, but it flowers under cultivation at a very much smaller size. The leaves are pinnate, each bearing three or four pairs of leaflets. The racemes are terminal and pendulous, bearing a profusion of large deep rosy-scarlet flowers. Native of Caraccas.

B. coccinea.—Leaves with two or three pairs of somewhat oblong-acuminate leaflets; it produces its fascicles of bright scarlet flowers in July and August, and grows from six to ten feet high in its native woods of Venezuela.

B. grandiceps.—This species is said to attain a great height; it produces from eight to ten or more pairs of oblong-lanceolate leaflets. The branches and footstalks are downy. The large capitate heads of red flowers are produced in July and August. It is a native of the mountain woods of Caraccas.

B. latifolia.—A fine shrub; leaves bearing from one to

three pairs of ovate and very sharply pointed leaflets. The flowers are bright red, borne in very dense fascicles. It grows about six feet in height, and is a native of Trinidad.

Burchellia.

This is a small genus of *Rubiaceæ*. The known species are all moderate sized shrubs, remarkable for their handsome flowers. *Burchellias* are natives of South Africa, and may be grown in a cool stove, where they will form objects of great beauty when in flower. The soil best adapted for them is a mixture of loam and peat, with the addition of a little sand.

B. capensis.—The present species attains the height of four or five feet, and is called by the natives Buffel-horn, on account of the hardness of its wood. The leaves are opposite, oblong-ovate, somewhat hairy, and dark green in colour. The flowers are disposed in heads, tubular in shape, and of a deep scarlet colour. It is a very desirable plant, flowering in March and April, continuing in full beauty for a long time. Native of the Cape of Good Hope.

Callicarpa.

C. purpurea.—This plant belongs to the *Verbenaceæ*, and is the only member of the genus we purpose alluding to in these pages; this, however, should be grown in every collection where plants are required for winter decoration. Through bad management and neglect many plant growers have been led to discard it as worthless, but this is certainly a mistake. It is of shrubby habit, with opposite ovate-acuminate leaves, serrated at the edges, and both sides of the leaves, as well as the stem, are profusely clothed with hairs. The flowers are borne in cymose clusters, upon foot-

stalks which issue from the axils of the leaves, and are themselves very insignificant, but they are followed by bunches of from fifty to a hundred bright glossy deep violet coloured berries, which literally bear the plant down with their weight, and remain in full beauty from November to May. The soil best adapted for its growth is a mixture of loam and peat in equal parts, with a little sand added. If care is taken to train the plants into a compact shape, they form some of the most attractive objects which can be had during winter for decorating either the stove or the conservatory. Native of China.

Centradenia.

A pretty free-flowering genus of *Melastomaceæ*, the flowers of which are of no great beauty individually, but are so abundantly produced that the plants become very effective and useful, more especially as they bloom throughout the winter and spring without cessation. They are of the easiest culture, and should be potted in a mixture of two parts peat to one of loam, mixing a good proportion of silver sand with the compost.

C. floribunda.—A compact-growing branching plant, with narrow pale green leaves, which are, during the winter months, almost hidden by the profusion of small white petaled flowers with which it is laden. Native of Brazil.

C. grandifolia.—This species has large oblong-ovate leaves, of a bright intense green above, and deep red beneath; the stems are quadrangular and winged; and the flowers, which are white, tinged with pink, are produced in branching heads in great abundance. Native of Mexico.

Centrostemma.

This fine stove plant, sometimes called *Cyrtoceras*, is very

nearly related to *Hoya*, and may be treated in the manner recommended for that genus. It is, however, of erect shrubby habit. The genus is entirely confined to the Malayan Archipelago, and is very ornamental when well managed.

C. multiflorum.—A very handsome stove evergreen shrub, somewhat liable to variation, if we may judge by the many names it has received, it being known in gardens as *Hoya multiflora*, *Hoya coriacea*, *Cyrtoceras reflexum*, *Cyrtoceras Lindleyanum*, and *Cyrtoceras floribundum*. The leaves, although variable, are opposite, somewhat coriaceous in texture, and ovate in shape, tapering to the point and attenuated at the base. The umbel is slightly drooping, the flowers being white, tipped with buff. It blooms during the summer months, and is a very desirable plant both for exhibition purposes and likewise for home decoration. Native of Manilla.

Chirita.

C. Moonii.—A Gesneraceous plant, well deserving the attention of every plant grower. It is a lovely object when in flower, the blooms being tubular in shape and blue with pale yellow throat, but as it requires careful treatment, it has been cast away by many cultivators to make room for plants of more hardy constitution. This custom is one which is much to be regretted, for it leads to such plants as the present, and, indeed, many others equally fine and equally ornamental, being lost to the country. *C. Moonii* is a native of Ceylon, and should be grown in a compost of fibrous peat, good leaf mould, and plenty of sand.

Clerodendron.

A family of stove plants belonging to the *Verbenaceæ*, and comprising two distinct groups, the one being of scandent, the

other of shrubby habit. The scandent ones should be potted in a mixture of peat, loam, and dried cow or sheep manure, with the addition of a little sand. In the summer, while the plants are growing, they should have strong heat, and abundance of water, with full exposure to light, though not so as to burn the foliage. About the end of August the wood should be ripened off, by giving less water, and more air; and when this is accomplished the plants should be removed to a cool house during winter. This *régime* will induce vigorous growth when they are placed in heat the following spring. The shrubby kinds will thrive well under the same treatment, but instead of being spurred in the pruning, they must annually be cut hard down to the old wood.

C. Bethunianum.—A fine stove shrub, producing large cordate-acuminate leaves, which are smooth above. The panicle is large, terminal, thyrsoidly-pyramidal, the bracts, pedicles, and calyces being all coloured; the flowers are crimson, with a white spot on the upper, and a purple one on the two lateral lobes. It is a native of Borneo.

C. fallax.—An erect-growing shrub, with large cordate-ovate opposite leaves, which are slightly lobed, and of a dark green colour. The panicles are terminal erect, and profusely laden with its bright scarlet flowers. It blooms during August and September. Native of Java.

C. fragrans pleniflora.—This plant resembles *C. fallax* in general appearance, but the leaves are not lobed, and are more of a roundish-ovate or obovate shape. The flowers are produced in compact heads, and are white, suffused with pink, and deliciously fragrant. It blooms during the late summer and early autumn months. Native of China.

C. infortunatum.—Like the other shrubby species we have cited, this is a gorgeous plant when in flower. It blooms while comparatively dwarf, and has bold roundish-cordate

glossy dark green leaves, and coloured panicles of large vivid scarlet flowers. It was introduced from Ceylon, of which country and of India it is a native.

C. paniculatum.—A magnificent stove shrub, with large long-stalked cordate-hastate leaves, which are lobed at the margin, and somewhat shiny above. The scarlet flowers grow in a large pyramidal terminal panicle, which gives the plant a very showy character. It is a native of India, and the Indian Archipelago.

C. speciosum.—This handsome plant is said to be the result of a cross between *C. Balfouri* and *C. splendens*. It resembles the former in having a very large calyx, but instead of being pure white, as in that kind, it is suffused with red, and the corolla is a rich deep rose. It is of scandent habit, with oblong-ovate glabrous leaves, and will become a very fine exhibition plant.

C. splendens speciosissima.—A superb variety of *C. splendens*, and one of the best stove climbers in cultivation. The leaves are somewhat oblong, and of a deep shining green ; its bright scarlet panicles of flower are produced throughout the summer months. The original form is a native of Sierra Leone.

C. squamatum.—This is one of the very finest of the genus, for either stove or conservatory decoration, its large branching panicles of bright scarlet flowers being produced about July, and continuing in beauty for months. The leaves are roundish-cordate, and the panicle, which is loosely pyramidal, is everywhere coloured. The plant is a native of India and Japan, and sometimes called *C. Kæmpferi*.

C. Thomsonæ var. *Balfouriana.*—This is a seedling form of *C. Thomsonæ*, obtained in this country, and is of scandent habit, producing large, smooth, dark green, opposite leaves, and large panicles of bright crimson flowers, with pure white calyces. *C. Thomsonæ* is similar in character to this variety,

but somewhat smaller in all its parts, and therefore we prefer *Balfouriana*, which we regard as quite an indispensable plant, either for home decoration or exhibition purposes. *C. Thomsonæ*, the parent of this variety, is a native of Old Calabar, where it luxuriates on the banks of the river, above the range of salt water. Some hybrids between it and *C. splendens* have been obtained.

Coccocypselum.

C. discolor.—This old but very ornamental plant is a native of the mountains of Jamaica, and consequently does not require so much heat as those plants from the same country which are found in the low woods and forests. It is admirably adapted for suspending in baskets, for the decoration of the stove through the winter months, its deep ultramarine berries being produced in profusion, and affording a striking and pleasing contrast with other plants. The soil best adapted for its cultivation is a mixture of loam and peat, with a little sand, the basket having been lined before planting with a thick layer of sphagnum moss. It should be grown in a warm green-house during summer, and taken into the stove towards autumn, where it will continue in great beauty during the whole winter.

Cochliostema.

A genus belonging to the order *Commelinaceæ*, containing but few species, all of which, however, are well deserving the attention of all lovers of plants. They should be grown in a mixture of peat, leaf mould, and loam, in about equal parts, adding sufficient sand to make the whole feel gritty. The pots should be well drained, and a copious supply of water given, both to the roots and from the syringe. We are not

aware of its being propagated in any other way than by seeds.

C. Jacobiana.—This is a most beautiful species, and well deserves general cultivation, either for the beauty of its foliage or its flowers. The leaves are oblong-lanceolate, from one to three feet in length, and from six to eight inches in breadth, sheathing at the base, and of a rich dark green colour, edged with a narrow margin of purple. The flowers are produced on large branching panicles, the lateral branches being ornamented with large mauve-coloured bracts, whilst the flowers are blue and violet. There are several varieties of this grand plant; some we have seen much inferior to that in our possession. It is a native of Ecuador.

Codonanthe.

A group of plants belonging to the *Gesneraceæ*, and by some botanists referred to *Hypocyrta*, of which they then form a distinct section. Their treatment is the same as that of other small shrubby Gesneraceous plants.

C. Devoniana.—This plant is very similar in habit and appearance to *Æschynanthus*. The leaves are cordate, thick, dark green above, and paler below; and the flowers, which are produced from the axils of the leaves in great abundance, are pure white, with a spreading limb, and a yellow throat, spotted with red; these are succeeded by good-sized round red berries. It is a beautiful basket plant. Native of Brazil.

C. Picta.—A handsome basket plant, with opposite, thick, fleshy, oblong, dark green leaves. The flowers are freely produced during summer; they are tubular, with a spreading limb, and pure white, except the throat, which is yellow, spotted with purple. This plant very closely resembles an *Æschynanthus* in its general aspect. Native of Brazil.

COLUMNEA.

A showy genus of *Gesneraceæ*, the species of which are found growing upon trees in dense woods in the West Indian Islands and in South America. The leaves are opposite, fleshy in texture, and generally hairy; and the flowers are tubular. They are splendid companion plants for *Æschynanthus*, and succeed admirably if treated in a similar manner.

C. Aurantiaca.—A very fine species, unfortunately now rarely met with. The flowers are of a very deep rich orange colour. It makes a beautiful basket plant. Native of New Grenada.

C. aureo-nitens.—This plant is very distinct and singular in its appearance, having the leaves broadly lanceolate and densely villous, and the flowers of a rich deep orange red. Native of Columbia.

C. erythrophæa.—A fine species, with lanceolate leaves, tapering to a point, oblique at the base, and of a rich deep green. The flowers are large, produced singly from the axils of the leaves, bright red, with the large spreading calyx blotched with red inside. A most beautiful plant, from Mexico.

C. scandens.—A handsome species, having ovate-acute serrated leaves, clothed with a few soft hairs, and deep green in colour. The long tubular flowers are hairy, and of a bright scarlet colour. Native of shady woods in the West Indies.

C. Schiedeana.—The leaves of this species are oblong-lanceolate, and covered with short, soft hairs. The flowers are upwards of two inches long, the ground colour yellow, most curiously and densely spotted and dotted with brown. Native of Mexico.

Combretum.

The plants of this order adorn the forest trees of the tropics with immense festoons and garlands of their gay flowers, and the species in cultivation are amongst the finest ornaments of our plant stoves. They should be potted in good loam and peat, about two parts of the former to one of the latter, a little silver sand being added. As plants for training up pillars or rafters in the stove, the kinds enumerated here are invaluable, and they are also splendid exhibition plants, although they are rather difficult to manage for this purpose.

C. micropetalum.—This is a fine and exceedingly rare climber, well adapted for training up the pillars or trellis work in the stove. It flowers during August and September, and consequently is rather late for exhibiting. The leaves are opposite, four or five inches long, somewhat oblong, and of a dark green colour. The flowers are produced in racemes about as long as the leaves, and are densely crowded; the petals are very small, the display being made by its numerous long bright yellow stamens and orange tipped anthers. Native of Brazil.

C. purpureum.—A magnificent plant for stove decoration, and as an exhibition plant it is not to be surpassed. It is of scandent habit. The leaves are oblong-lanceolate, and of a shining dark green colour. The panicles are branched, bearing many rich vivid scarlet flowers. The plant often blooms twice in the year, but its usual season is June. It is also known by the name of *Poivrea coccinea*. Native of Madagascar.

Curcuma.

This genus is an extensive one belonging to the Ginger-

worts, and the species are great ornaments to our hothouses; they cannot, indeed, be made much use of as exhibition plants, yet this is no reason why they should be discarded, for they make fine ornamental plants towards autumn, when other things are falling off, and they are easy of culture and take up but little room, as they lose their leaves and require resting after the flowering season is past. The soil best adapted for them is a mixture of loam and peat, about two parts of the latter to one of the former, to which should be added a little sand. They may be increased by divisions of the root. There are a considerable number of species in this genus, many of which cannot be recommended to the amateur whose space is limited, yet they possess great interest to those who cultivate plants remarkable for their economic properties, inasmuch as turmeric is obtained from several members of this family.

C. australasica.—This, the only species known to inhabit Australia, was found by Mr. J. G. Veitch, near Cape York. The leaves are about eighteen inches long, somewhat lanceolate and acuminate, and of a light green colour. The flower spike is seven or eight inches long, bearing beautiful rose coloured bracts, and yellow flowers. It continues in bloom upwards of a month, and is a very desirable plant. Native of North East Australia.

C. Roscoeana.—A very beautiful species, which no garden should be without, its bright orange bracts and scarlet flowers being very gay and effective during August and September. It lasts a long time in full beauty. Native of the East Indies.

Dalechampia.

D. Roezliana rosea.—A superb stove shrub, of free branching habit. Like *Bougainvillæa*, this plant is indebted for its attractiveness not to the flowers, but to the bracts, which in

this case surpass those of that genus both in size and brilliancy, being of a bright rich carmine rose colour. There is, moreover, no difficulty in blooming it. In habit it is erect, branched, and leafy; the leaves are about five inches long, somewhat lanceolate in shape, dark green above and paler below; and the flowers are freely produced from the axils of the leaves, the bright rose coloured bracts, situated in opposite pairs at the end of the pedicle, being somewhat heart-shaped, nearly three inches long, and very fragrant. This valuable addition to our stoves is a native of Vera Cruz, and succeeds well in a temperature ranging from 60° to 75°. We have found that, although this plant thrives best in a tolerably warm atmosphere, it does not like much exposure to the sun; indeed, the difference between plants grown in the shade is something extraordinary. It should be well drained, and potted in a mixture of loam, peat, and leaf mould, in equal parts, with a good portion of silver sand. If size is required, the flowers must be kept picked off, and the plant shifted on into a larger-sized pot whenever the roots have filled the one it is occupying.

Dipladenia.

This genus of handsome flowering plants, all of which are climbers, belongs to the *Apocynaceæ*. The species make excellent specimens for exhibition purposes, or for the decoration of the stove. If for exhibition, they should be trained upon wire balloon-shaped trellises, but the young growths should be allowed to grow upon strings up the rafters of the house, and a short time before the blooms open they should be taken down, and fixed upon the trellis. They will be found to succeed admirably under the following treatment:—Pot them in a mixture of peat and turfy loam, in equal proportions, with the addition of a good portion of

silver sand; good drainage is also of particular importance with these plants. They require a moist atmosphere, and a bottom heat ranging from 80° to 90°, together with full exposure to the sun's light. But although we recommend bottom heat for these plants, we by no means consider it desirable that they should be plunged into it; rather let them stand over this heat, and keep the atmosphere moist by sprinkling the stages and paths with water. Towards the end of summer, after they have done flowering and have finished their growth, remove them to a cooler house, and fully expose them to sunlight, to ripen the wood. The temperature they enjoy is in summer from 65° to 85°, with a moderate quantity of water, which must be applied with great care. In winter very little water will be required, and the temperature should be reduced to 60°—65°; from this, if they are wanted for exhibiting in May or June, they must be brought, and placed in heat again about the beginning of January.

D. amabilis.—One of the finest of the family, and a garden variety. The foliage is intermediate between that of *D. crassinoda* and *D. splendens;* the flowers are borne in clusters, and are very large, of a rosy crimson colour, the lobes of the flower being very round and stiff. It will continue blooming from May to September, and makes one of the finest exhibition plants we have.

D. amœna.—This, like the preceding, is a garden variety, and is a great improvement on *D. splendens;* in habit of growth it is even superior, in some respects, to *D. amabilis.* The lobes of the flowers are round, and do not reflex, and it is a most abundant bloomer. The colour of the flower is a deep rose, with orange yellow throat. A valuable exhibition variety.

D. Boliviense.—A plant of less robust habit than the pre-

ceding, and differing from all the other known members of the genus in the colour of its flowers, which are pure white with a lemon coloured throat; it is an abundant bloomer, and should be grown in all collections of stove climbers. Native of Bolivia.

D. crassinoda.—A magnificent stove climber, and also a fine exhibition plant, and one that, if properly managed, will produce a succession of its beautiful rose-coloured flowers for three or four months. Although long known in our collections by this name, it would appear that it is more correctly called *D. Martiana.* Native of Rio Janeiro.

D. crassinoda Houtteana.—This is a beautiful variety, and an improvement on the preceding; it has beautiful rose-coloured flowers of good substance, and with an orange-coloured throat.

D. Harrisii.—This very fine species has hitherto proved rather difficult to bloom, but it is well deserving cultivation, on account of its distinct colour. It has large oblong-ovate acute leaves, which are quite smooth, and dark green. The flowers are large, bright yellow, shaded with orange, of good shape and substance, and delicately scented. It blooms during the summer months. Native of Trinidad.

D. insignis.—A superb variety of garden origin; the leaves are oblong-acuminate, dark green on the upper side, paler below; the flowers are large and of great substance; the lobes of the limb are bright rosy carmine in colour, the throat slightly darker, and yellow at the base, whilst the tube outside is pure white. It is a fine addition to this genus, and was obtained from seed in the garden of J. Waterhouse, Esq., of Halifax.

D. nobilis.—Another handsome kind, producing large showy flowers, which change from rosy purple to orange red. It is of free growth, and extremely handsome.

D. Williamsii.—This fine new garden variety is thoroughly distinct from any of the previously named kinds, it is remarkably free, both in habit of growth and flower. The leaves are stout, oblong, tapering to a sharp point, and upwards of six inches long, by about an inch in breadth at the widest part. The flowers are produced in large clusters in the greatest abundance, indeed a marked feature of this variety is the great length to which the spike reaches, and consequently the greater quantity of blooms; the flowers are large and of good substance, measuring upwards of four inches across the limb; the lobes are round and full; the colour is delicate soft pink, whilst that of the throat is deep warm rose. As this combination of colours is not found in any other kind it renders it a valuable addition to our stove climbers, and also to the number of subjects fit for the exhibition table.

DIPTERACANTHUS.

A genus of Acanthaceous plants, of easy culture, which, if a little care is bestowed upon them, by pinching out the points of the shoots to cause them to throw out lateral shoots and make bushy plants, will form highly decorative objects for winter flowering. There are several species of this genus, but we only introduce one here, which should be in every collection of winter-flowering plants. The soil best suited for *Dipteracanthus* is a mixture composed of two parts peat and one part rich loam, with a little sand added. The whole of the genus strike readily from cuttings, and therefore rough straggling ill-shaped plants should not be tolerated.

D. Herbstii.—A free-growing species, with opposite oblong-lanceolate leaves, dark green on the upper side, with a narrow stripe of white on each side the mid-rib, traversing the whole length of the leaf; on the lower side the colour is

reddish purple. The flowers arise from the axils of the upper leaves in great profusion throughout the whole winter, and are produced into a tube about four inches long, of a rosy purple colour, the limb being pure white and erect. Native of Brazil.

Epiphyllum.

A genus of beautiful plants of the order *Cactaceæ*, which until within a few years had fallen into neglect, and had been nearly forgotten. They are, however, amongst the most useful of winter decorative plants, either as young plants, or when grown into large specimens. As small plants, grafted upon stems six inches or a foot high, with compact well-formed heads, they are charming objects for the decoration of the dinner table, or for standing in vases for room decoration, in company with either palms or ferns. *E. truncatum* was introduced to this country from Brazil in the early part of the present century; *E. Russellianum* is also a native of the same country; while the great portion of those beautiful forms which delight the eye so much with their blaze of colour are hybrids between these two kinds. They succeed very well upon their own roots, but grow more rapidly and display their beauties to greater advantage when grafted upon the Barbados Gooseberry (*Pereskia aculeata*) or upon *Cereus speciosissimus*, the latter of which makes the best stock, especially for a large pyramid. In potting, the soil used should be a mixture of turfy loam, peat, and leaf mould, in equal parts, with a liberal addition of silver sand. They should be grown in the stove, and when growth is finished removed into a cooler and drier house to ripen, and from thence again transferred to the stove, as occasion may require, to furnish a succession of bloom.

E. Russellianum.—A form introduced from Brazil, and considered by many as a distinct species, to which opinion we ourselves incline, as the flowers are different in form, and are produced at quite a different season. Its blooms are of a delicate rose colour, opening early in the month of May.

E. Russellianum rubrum.—In this the flowers are very much larger than the preceding, and of a bright rosy red.

E. Russellianum superbum.—In this variety the colours of *truncatum* and *Russellianum* are combined.

E. truncatum.—The flat leaf-like branches are very much toothed; flowers large, and of a deep rose colour. It blooms during the autumn and winter months. Native of Brazil.

E. truncatum amabile.—This charming form has white flowers, with the upper part of the petals of a rich purple.

E. truncatum aurantiacum.—The flowers of this variety are of a large size, and of a bright reddish orange colour.

E. truncatum bicolor.—The flowers of this are white, beautifully edged with rose; a very effective variety.

E. truncatum coccineum.—In this the flowers are self coloured, being a rich deep scarlet.

E. truncatum cruentum.—Flowers very dark reddish purple.

E. truncatum elegans.—The flowers of this are of a bright orange red, the centre a rich purple.

E. truncatum magnificum.—A large-flowered variety, producing white flowers, with rich bright rose coloured margins.

E. truncatum purpureum.—The flowers of this are self coloured, and of a dark purple.

E. truncatum roseum.—As its name implies, this is wholly of a bright rose colour.

E. truncatum Ruckerianum.—This has deep reddish purple flowers, the centre a rich violet; a very effective variety.

E. truncatum salmoneum.—One of the self coloured sorts, being of a reddish salmon.

E. truncatum spectabile.—The flowers of this variety are white, with purple margin.

E. truncatum spectabile carminatum.—This differs from the preceding in having white flowers, with a reddish margin.

E. truncatum violaceum grandiflorum.—This has large flowers of a pure white, with delicate purple margin.

E. truncatum violaceum superbum.—The flowers of this are pure white, with a rich deep purple margin.

Eranthemum.

The very extensive order *Acanthaceæ* possesses numerous species of great beauty for decorative purposes, many of them flowering during the winter, for which purpose they cannot be too highly recommended. The present genus has some very elegant and free-flowering members, of which we have selected a few of the best, such as will be found very effective in company with other plants. They should be potted in a compost of leaf mould, peat, and loam, in about equal parts, with a little silver sand. To increase these plants, cuttings should be inserted in sand with gentle bottom heat, when they will soon root and form nice young flowering plants.

E. Andersoni.—This very pretty species has been introduced from the Island of Trinidad to our gardens, but is really a native of the East Indies. It is abundantly different from *E. asperum*, though evidently nearly allied to that species, and produces spikes of bloom from six to ten inches in length, the two upper and lateral lobes of the flower being pure white, and the lower segment very thickly dotted with crimson lake, and broadly margined with white. It continues several weeks in beauty, and is a very beautiful addition to the cultivated species of *Acanthaceæ*.

E. asperum.—A remarkably handsome slender-growing stove shrub, the leaves of which are veined at the margins,

EUCHARIS GRANDIFLORA.

NEW GRENADA.

upwards of two inches long, somewhat ovate, and dark green in colour. The flowers are freely produced in clusters, the upper lobes of the flower white, spotted with purple, the large lower lobe being a rich deep purple. It is a very desirable winter-flowering kind, from the Soloman Islands, in the South Pacific.

E. Cooperi.—A handsome, half shrubby, free-flowering plant. The leaves are about three inches long, and five inches wide, narrow-lanceolate, with the margins deeply cut, or inciso-lobate, and dark green in colour. The flowers spring from the axils of the leaves, and are white, beautifully spotted with small purple dots, arranged in lines. A native of New Caledonia.

E. pulchellum.—An old inhabitant of our stoves, and one of the prettiest for winter decoration. The leaves are petiolate, broadly ovate, dark green, the surface somewhat wrinkled; the flowers are produced very freely, and are of a rich bright blue colour. Native of the East Indies.

EUCHARIS.

E. grandiflora is a plant to which any description would fail to do justice, and one which will well repay every care that may be bestowed upon it. We have frequently seen this plant with thirty and forty spikes of its lovely pure white flowers expanded at Christmas. Such a sight would at any time command attention, but at that particular season it is doubly valuable. With a little judicious management, and a moderate stock of plants, the *Eucharis* can be had in flower at almost any time of the year. We prefer it through the winter months, and if hardened off gradually, it will at that season stand for a long time, if wanted for the decoration of halls or rooms in the dwelling-house.

This grand plant, which is frequently to be found in collections under the name of *E. amazonica*, belongs to the *Amaryllidaceæ*, and is a native of Choco, in New Grenada. It produces from its large bulbs rich dark green, somewhat ovate leaves, which are from twelve to eighteen inches long, and gracefully arched, while the flower stem is a foot or more in height, bearing five or six, sometimes seven, of its noble Narcissus-shaped blooms, which are pure white, with the cup faintly tinged with greenish yellow.

We have found it succeed well when potted in good fibrous loam, with the addition of a little peat and well-decomposed sheep manure, and a slight sprinkling of silver sand. In potting, the drainage must be good. It may here be noted that good drainage does not consist merely in the quantity of potsherds used, but much more in the careful manner in which they are placed in the pot. The *Eucharis* enjoys most copious supplies of water, but it must by no means become stagnant, or failure will follow. Frequent shifting of this plant, unless for the sake of increasing the stock, is not in our opinion advantageous. We have always found them bloom better when somewhat confined at the roots. Having potted those which require it, say in June or July, they should be put into a high temperature, with a moist atmosphere, and be liberally supplied with water, both to the roots and foliage, shading them in the same manner as would be done with any other soft-leaved stove plant. About September place them in a cooler house, and keep a little drier, but not quite dry, until the beginning of November. Some good growers of this plant advocate the thorough drying off of the bulbs, but having been so remarkably successful by adopting the plan just described, we must differ from them in that particular point. At this stage some of the plants should be put into a temperature of about 65°, and

again liberally supplied with water, when the flower scapes will soon begin to make their appearance. A fresh batch of plants should be brought forward into heat from time to time, so that a constant succession of this ever-pleasing flower may be had, either for the decoration of the stove or the dwelling-house.

E. candida.—Though not equal to *E. grandiflora*, is well worth growing, it differs mainly in its smaller size; and on this account is much prized for making up small bouquets, as it can be used when the larger flowers of *E. grandiflora* would be out of place. Native of New Grenada.

EUPHORBIA.

This is a very extensive genus, typical of the *Euphorbiaceæ*; but only a very few of its species are of any horticultural merit. Upon the best of these we have now to offer a few remarks. Their flowers are of great brilliancy, and admirably adapted for bouquets; so that, blooming as they do during winter, when flowers of any kind are particularly valuable for this purpose, they deserve to be universally cultivated. *E. splendens*, on account of the spines on its branches, is best planted out in the stove or warm greenhouse, and if against a wall it will soon cover it, and become a thing of great beauty, and a never-failing source of flowers for months. *E. Jacquiniæflora* is well adapted for growing as a rafter plant, as a specimen, or in small pots for dinner-table or hall decoration; indeed, any amount of care bestowed upon this plant will be amply repaid by the cheering effect produced by a display of its rich warm scarlet flowers in the time of frost and snow. The compost we find these plants thrive in best is a mixture of good fibrous loam and peat, in equal parts, with a liberal addition of silver sand.

They may be readily increased both by cuttings and seeds in the former case it will be advisable to allow the cuttings to lay for a day or two, to allow the milky juice to dry up.

E. Jacquiniæflora.—This plant produces along its flexile branches a series of axillary flowers of a bright orange scarlet, forming long floral wreaths, and is unquestionably one of the finest winter-flowering plants in cultivation. To obtain good handsome specimens of this species, we take some plants that have been resting after the flowering season, say about June, prune them into form, and place them in a little extra heat. As soon as the buds begin to swell, we shake off some of the old soil, and repot them in the compost recommended above, keeping them in a moist atmosphere, with a temperature ranging from 68° to 75°. As the plants increase in size, they must be shifted into larger pots, according to the uses for which they are intended; and they will also require the ends of the growths to be pinched out several times, so as to produce handsome pyramids, or whatever shape the taste of the cultivator may most incline to. Young plants, for dinner-table or hall decoration, must be kept in smaller pots, and supplied occasionally with waterings of weak liquid manure.

E. splendens.—A totally different-looking plant to the preceding. It is of sturdy branching habit, the stems dark coloured, and closely set with long, stout, sharp thorns. The leaves are rather small, light green in colour, and thin in texture; and the flowers (bracts) are produced in clusters, bright red in colour, and admirably adapted for bouquet-making, and for the decoration of the plant-houses during winter. This does well planted against the back wall of the stove, where there is plenty of light; in this situation it flowers beautifully, and is useful for cutting, instead of disfiguring the pot plants. Native of Bourbon.

Eurycles.

A genus belonging to the Amaryllids, and nearly allied to *Pancratium*; it contains but few species, and the one here introduced certainly deserves more general attention than has hitherto been accorded it. The cultivation of this plant is extremely simple; it should be potted in a compost consisting of loam and peat in the proportion of about three parts of the former to one of the latter, to which should be added a small portion of sand. Increase is effected by offsets and by seeds when procurable.

E. amboinensis.—The bulbs of this plant are ovate, supporting large petiolate, roundish-cordate leaves, which are light green in colour; the scape supports a many-flowered umbel of large pure white Pancratium-like flowers, which renders it a most conspicuous and desirable inhabitant of the stove; its flowers are produced about April and May, and last a considerable time in full beauty. Native of Amboyna and several islands in the Eastern Archipelago.

Exacum.

E. Zeylanicum.—This very beautiful plant is a native of Ceylon, and belongs to the Gentian-worts, a class of plants not the easiest to cultivate, though it contains many lovely varieties; the present species, though an annual, should be more frequently seen in collections. It grows from one to two feet high. The seeds should be sown in April, placed in bottom heat, and the plants carefully shifted from time to time, as the roots fill the pots. The soil should be about equal portions of loam, peat, and sand. A liberal supply of water should be given, care being taken that it does not stagnate about the roots. As before stated, it is an annual;

the stem and branches are four-angled, with the angles winged; the leaves are opposite, ovate-lanceolate, with a tapering point, three-nerved, of a bright shining green colour, and nearly three inches long. The flowers are produced in terminal and axillary racemes, so as to form a dense head, and they are large, and of a beautiful violet colour. It should be generally cultivated.

Franciscea.

This beautiful genus cannot be too extensively grown as home ornaments, being highly decorative, deliciously sweet, and also easily brought into bloom at any season of the year. It is also a genus of first-rate value, as furnishing grand objects for exhibition purposes. To grow these plants successfully, they must be potted in a compost consisting of a mixture of fibrous peat and leaf mould, in equal proportions, one-fourth the bulk of the mass of loam, and a good quantity of silver sand being added. The plants should be shifted directly after they have done flowering, and placed in a temperature ranging from 60° to 68°, and liberally treated with water, both to the roots and foliage. When the young shoots have made five or six leaves, the tops should be pinched off. This treatment should be continued until October or November, when the flowers will begin to show themselves, and syringing must be then less frequently had recourse to. The plants should at this stage, if not wanted in bloom, immediately be removed to a much lower temperature, say to a temperature of about 48°, which will greatly enhance the quality of the blooms. For a succession of flowers, plants must be kept growing later, and be brought forward at various times. They are all evergreen shrubs of great beauty, the best of them being noted below. Franciscea

are easily propagated by cuttings, which should be inserted in sand and placed in gentle bottom heat, with a bell-glass over them.

F. calycina.—This is one of the largest-flowered kinds with which we are acquainted. The leaves are large, shining, lanceolate, and light green. It is of free growth, and produces a succession of its very large trusses of rich purple flowers throughout the whole year. This is an invaluable plant for exhibition purposes. Native of Brazil.

F. calycina major.—A superb variety of the preceding, which has originated under cultivation; it differs only in being larger in all its parts from the ordinary species, and thus becomes a great acquisition.

F. confertiflora.—A very handsome species, known also under the name of *F. laurifolia*. It is valuable as an exhibition plant, and also for the long time it may be had in bloom for home decoration. By having several plants, and keeping them in various temperatures, this kind will produce a succession of its beautiful soft blue flowers from January to June. Native of Rio Janeiro.

F. eximia.—Though not quite so large in the size of its flowers as *F. calycina*, this is a very desirable plant, forming a handsome bush, and being extremely ornamental when covered with its deep violet-coloured blossoms; as an exhibition plant it is invaluable. The leaves are oblong-lanceolate in shape, dark green, but not glossy. The flowers are produced from the points of the shoots, upwards of two inches in diameter, and of a deep purple or violet colour. It blooms in great profusion from January to July. Native of Brazil.

F. latifolia.—This very distinct species blooms most profusely upon the young wood during winter and early spring. The leaves are broadly ovate, smooth, and bright green. The

flowers are deliciously fragrant, and when they first expand are lavender colour, with a distinct white eye, but eventually they fade to almost white. Native of Brazil.

F. Lindeniana.—A very handsome species, the leaves of which are ovate-acuminate, and dark green. The flowers are produced in abundance, of a rich purple, with a light eye. Native of Brazil.

F. uniflora.—A small-flowered species, making, however, in the winter months, a great display of its deliciously sweet flowers. It is of free branching habit, with ovate-acute dark green leaves. The flowers are light violet, changing with age to pure white. This species can be grown in small pots for table decoration, being very easily formed into pretty compact bushes for this purpose. We have found this, and the other species also, bloom most abundantly when potted in nothing but leaf mould and a little sand, but we have never tried this compost with large specimen plants. Native of Rio Janeiro.

Gardenia.

A lovely family of plants, of compact free growth, and producing quantities of deliciously fragrant flowers. Some of the *Gardenias* are popularly known as Cape Jasmines, a name which seems to have been given them on account of their fragrance. They are well deserving a place in any collection of plants, however small, their pure white flowers and sweetness rendering them especially adapted for bouquets; while the plants, being of hardy constitution, are able to withstand exposure in the drawing-room or even the entrance hall.

All the species of *Gardenia* with which we are acquainted are white flowered and sweet scented, except *G. Stanleyana*, which has a totally different habit. They should be potted in a compost consisting of a mixture of loam and peat in

equal proportions, with the addition of some silver sand, and a little well-decomposed manure; and should be grown in a moist stove or frame with bottom heat where practicable, but if the latter is not to be had, a little extra atmospheric heat at the time the growth is being made is found to be a good substitute. When the growth is completed they may be kept cooler, being replaced in the warmer atmosphere when they are wanted to open their flowers. After blooming they should be pruned, potted in the soil recommended above, and started into growth again for another season's flowering. Cuttings of the half-ripened wood root freely; they should be inserted in sand and covered with a bell-glass until rooted, which is greatly facilitated by the pots being plunged in gentle bottom heat.

G. citriodora.—A very fragrant species, producing quantities of its single white flowers, about the size of Orange blossoms, from the axils of the leaves. It makes a compact spreading plant about two feet in height, with opposite, somewhat coriaceous, elliptical lanceolate dark green leaves. It is a very desirable winter-flowering species. Native of Natal.

G. florida.—The plant grown under this name is not the species, but a double-flowered variety, which is cultivated in Japan, the East Indies, and the Cape of Good Hope. The leaves of the *G. florida* of our gardens are opposite, sometimes verticillate, somewhat elliptical, pointed at both ends, and of a bright glossy green colour. The flowers are solitary, pure white, and about the size of those of a large double Balsam, deliciously sweet, and, as before remarked, well adapted for cutting for bouquets. When growing the plant should be treated to a high moist heat, but afterwards they will stand well in a cool house. Native of China. The pulp of the fruit of this species is used in China for dyeing yellow.

G. florida variegata.—This is a variegated form of *G. florida*, with leaves of the same shape and size as the preceding, but beautifully margined with yellowish white, and producing abundance of its sweet-scented flowers in winter and spring. It is a very handsome plant, and highly decorative.

G. Fortunei.—A fine robust-growing plant, producing flowers of great size. It is like a gigantic form of *G. florida*, but is not, like that species, a shy bloomer; on the contrary, it is very free. The leaves are opposite, sometimes in whorls, and bright shining green, which contrasts well with the large pure white fragrant flowers. Native of China.

G. radicans.—A neat shrubby plant, the leaves of which are narrow, lanceolate, and of a dark green colour, while the flowers are double, white, and very fragrant. It grows from one to two feet high, and is a native of Japan.

G. radicans major.—This resembles the preceding in every respect, but is larger in all its parts, though not so large as *G. florida*. It is a very desirable variety, and the most profuse bloomer of all.

G. radicans variegata.—A very interesting form of *G. radicans*, having the leaves margined with white, which gives it an elegant appearance, even when out of bloom. It should be in every collection. It was introduced from Japan.

G. Stanleyana.—This fine plant produces immense trumpet-shaped flowers, which are from eight to ten inches long, and about five inches in breadth; the throat and base of the lobes of the limb are blotched and spotted with rich dark reddish brown, while the margins are white; these flowers are deliciously fragrant. The leaves are medium-sized, oblong-acute, and dark green. It is a free-growing plant, blooming during the summer months. Native of Sierra Leone.

GESNERA.

This genus contains many beautiful species, varieties, and hybrids—plants which, when well grown, are invaluable for winter decoration, their ornamental foliage and numerous showy-coloured flowers rendering them highly ornamental objects at any time, and doubly so during the dull winter months. *Gesneras* are for the most part tuberous-rooted plants, and, by judicious management, they can be had in bloom during the whole year; but as autumn and winter are their natural seasons of flowering, they can be grown to greater perfection during summer, for blooming at that season, than at any other. As happens with so many other plants, the members of this genus are so neglected by many growers after flowering, that they dwindle away instead of increasing in vigour and beauty. To keep them in robust health, they must be well attended to after flowering, for then the bulbs for the following season have to be matured. In order to effect this, they must be carefully tended, giving them occasional waterings with weak liquid manure; but as the foliage begins to decay, less water will be required, and when the growth is finished, it must be entirely withheld. After this, though requiring to be kept dry, they must not be baked, but should be stored away in their pots in a cool dry place until again required. It is a common practice to shake the soil away from them when dry, and store the bulbs in dry sand; but we believe the best system is to leave them in their pots, and just start them into growth in the old soil before repotting, for by this treatment the bulbs are not so liable to injury, and the plants consequently flower much stronger. We have included some varieties here which have been produced by continental hybridisers, and which are

splendid decorative plants. Such startling results render it difficult to say what may eventually be done with this family by means of cross-breeding and hybridising. These plants succeed well if potted in a compost consisting of good fibrous peat, well-decomposed manure, a little light loam and leaf mould, and a liberal addition of silver sand. They like plenty of water at the roots, but dislike water upon their leaves, therefore *they must not be syringed* at all, but their leaves must be avoided, when water is in this way supplied to other plants. *Gesneras* may be increased by divisions of the tuberous roots, and also by cuttings, which root readily in heat. When they are increased by cuttings, it is preferable to take them off early in the season in order to give the plant sufficient time to form a tuber, for when no tubers are formed, the plant dies outright when it goes to rest.

G. Barlowi.—A very handsome and distinct kind, the leaves of which are ovate-cordate, serrated at the edges, bright green, and covered with rich crimson hairs, which give it a beautiful velvety appearance. The flowers are produced in great abundance, upon erect spikes, and are a very pleasing and delicate shade of salmon colour, slightly spotted in the throat. It blooms during winter and spring, and continues a long time in great beauty. A garden variety.

G. Blassii.—A fine scarlet, with pale green leaves; winter flowering.

G. chromatella.—A very desirable garden variety, with rich dark velvety leaves, and elegant erect spikes of drooping flowers, which are of a uniform rich yellow.

G. cinnabarina.—One of the most handsome winter-flowering kinds. The leaves are cordate, or broadly ovate, green, and beautifully shaded with flame-coloured hairs. The

flowers are freely produced, and of a bright cinnabar red, with a light throat. It is a native of Mexico.

G. Cooperii.—A fine old plant, with light green leaves, producing large tubers, and bright scarlet flowers, with a densely spotted throat.

G. Doncklaari.—One of the oldest and best of the species, with bright vermilion flowers, produced freely, and large, dark tinted foliage.

G. exoniensis.—The colour of the flowers is deep orange scarlet, with a yellow throat; they are very closely set together, and produced in masses ten and twelve inches through. The leaves are of a dark rich velvety texture, and, being covered with minute red hairs, they have a very remarkable appearance, changing colour according to the light in which they are seen. It is a garden hybrid, and very valuable for dinner-table decoration as well as the stove during the winter months, as it is a continual bloomer.

G. (*Nægelia*) *fulgida bicolor.*—The leaves of this variety are broadly ovate, deeply and coarsely toothed at the edges, the stem and leaves being hairy and of a rich dark green. The flowers are borne in erect panicles, and are very showy; the upper half of the tube is deep bright red, the lower part creamy white, faintly barred with lilac, the segments of the limb rounded with deep vermilion, the throat white, barred most strangely with red. It is said to be a native of Mexico.

G. glaucophylla.—This is a very distinct form; the leaves are of moderate size, glaucous, prettily mottled, and covered with red hairs. The flowers are very freely produced, of a deep orange red, the throat light, spotted with orange. It is admirably adapted for decorative purposes.

G. Hon. Mrs. Fox Strangways.—A very elegant and effective autumn-flowering stove plant, from one to two feet in height. The leaves are somewhat ovate, richly shaded with crimson

(as in *G. cinnabarina*), while the racemes of bloom are very large and pyramidal, supporting the clusters of bright nankeen or buff-coloured flowers, which are slightly tinged with red. The distinct colour will render this plant especially valuable for grouping for room decoration or in the plant houses.

G. Lindleyana.—Leaves broadly ovate, rich deep velvety green and red; flowers produced very freely, upper part of tube rosy pink, lower part and limb yellow, freckled with red.

G. Miellezii.—This is a long-tubed Gloxinia-like flower, of a rich purple, shaded with lilac, the throat white. It is a profuse flowerer, and is somewhat like *G. Doncklaari*, but more dense in growth.

G. (*Eucodonopsis*) *nægelioides.*—A beautiful garden hybrid, with cordate-ovate leaves, deep green in colour, hairy on the margins and roughly toothed. The flowers are large, tubular, bright rosy pink, marbled with red; the throat yellow, dotted with red. A very handsome plant.

G. (*Plectopoma*) *nægelioides aureo-roseum.*—This is a compact and very ornamental variety. The stems are erect, and the leaves ovate-acuminate, toothed at the margins, deep green above, reddish purple beneath. The flowers are tubular, large, and of a bright rosy lilac, the upper portions of the limb plain rose colour, lower part beautifully spotted with carmine, the throat marked with orange yellow. Garden hybrid.

G. (*Plectopoma*) *nægelioides bicolor.*—This magnificent plant is well deserving general culture. It is of free branching habit, with ovate-lanceolate leaves, toothed at the edges, purplish red on the under side, and a bluish metallic green on the upper. The flowers are large, the upper half rosy red on the outside, the lower orange yellow; the limb and throat are orange yellow, most profusely spotted with red; the two upper lobes are same colour as

the upper part of the tube, while the lower segments are margined with a deep belt of red spots. It is a very showy and ornamental kind. A garden hybrid.

G. (*Plectopoma*) *nægelioides candida.*—A beautiful form of this genus, with erect branching stems, the leaves broadly ovate, toothed at the margins, and deep green. The flowers are tubular, pure white, marked with pale yellow in the throat, very showy, and produced in great profusion. A garden hybrid.

G. (*Plectopoma*) *nægelioides corallinum.*—A very handsome variety, of compact and much-branched habit; the stems are red, the leaves of moderate size, coarsely toothed at the edges, and deep green; the flowers are large, rich deep red, almost maroon, the throat orange yellow, profusely spotted with red. A garden hybrid.

G. (*Eucodonia*) *nægelioides lilacinella.*—A most superb plant, with large cordate leaves, coarsely toothed at the edges, deep bright green above, paler and lanate below. The flowers are produced in profusion upon long footstalks, upon the numerous laterals, and from the base of the leaves upon the main stem; they are large, and of a delicate lilac, beautifully marbled with a deeper tint of the same colour, the throat lemon colour. A garden hybrid.

G. (*Plectopoma*) *nægelioides scintillans.*—This variety is very distinct, producing, towards the top of its shoots, an abundance of laterals, upon which the flowers are borne, so that a fine head of flowers is formed. The leaves are somewhat oblong, serrated on the edges, fine bright green above, pale below, tinged with red. The flowers are large, about two inches long in the tube, and nearly as much across the limb, the outside deep plum colour, the limb rosy red, throat orange yellow, streaked and dotted crimson. A garden hybrid.

G. nigrescens.—A very fine hybrid, with large dark velvety

leaves, and having the flower tubes of a dark red, the throat being light orange, and spotted.

G. purpurea macrantha.—A free-growing variety, producing large branching spikes of rich scarlet flowers and handsome foliage.

G. pyramidalis.—The leaves of this variety are about seven inches broad, and nearly round, with a dark velvety mottled ground. The flowers are deep orange red, the throat and lip light orange, spotted. A fine plant for the decoration of the dinner-table, producing its lovely flowers through the winter.

G. rosea punctatissima.—This is a most beautiful variety. The leaves are somewhat cordate, very regularly notched round the edges, and rich velvety green on the upper side, shaded crimson by the long hairs upon its surface. The flower spikes are long, and bear a profusion of flowers, which, in the upper half of the tube, are reddish pink, in the lower half, yellow, the limb creamy white, freckled with red.

G. sceptre cerise.—The leaves in this variety are ovate-cordate, beautifully shaded with crimson and bronze. The flower spikes are numerous; the flowers reddish crimson in the upper half of the tube, dull yellow in the lower half, the lobes deep crimson, bordered with orange, and the throat orange, with crimson spots and blotches. A very desirable garden hybrid.

G. zebrina splendidissima.—A fine branching variety, with handsome dark marbled leaves, and producing a long panicle of bright orange scarlet flowers; quite distinct.

Gloriosa.

A beautiful family of stove climbers, some species of which will indeed succeed in a greenhouse, and all in an intermediate house, after they have been started into growth in

the stove. They are exceedingly showy plants, and are easily managed. The soil best adapted for them is a mixture of fibrous peat, light loam, good leaf mould, well-decomposed manure, and silver sand in equal parts. After potting they will not, if the soil is in good order, require water until they show their growth; after this a good moist heat is necessary, and care must be taken to keep red spider and thrip from them. Weak liquid manure applied occasionally will be found to assist them very much, and they must be trained up the rafters, or upon a trellis, as they grow, or the tendrils with which each leaf is furnished at the apex will become so firmly fixed to other plants, that it will be impossible to remove them without injury. After flowering, and when the bulbs are quite mature, which will be ascertained by the foliage dying off entirely, the pots should be stored away in a cool dry place, and the tubers allowed to rest until they are required the following season. The name *Methonica* is preferred to *Gloriosa* by some plant-growers. These plants are usually increased by division of the roots, but as seed can be procured by artificial impregnation, young plants may also be obtained in this way.

G. grandiflora.—This is a strong-growing kind, with large sessile leaves, furnished at the apex with a long tendril into which the leaf is lengthened out, and which is so characteristic of this genus. The flowers are six-petaled, and measure upwards of eight inches in diameter; the petals somewhat narrow, and lanceolate in shape, and pure sulphur yellow. It is a free bloomer, and very distinct from the other species, producing its flowers from July to September. Native of Fernando Po.

G. superba.—In general habit this resembles the preceding, and is equally free in its growth and flower. The petals are narrow, deeply undulate and crispate, and some-

what bent back, in colour deep rich orange and red. It is widely distributed throughout the East Indies.

G. virescens.—This has the same habit and appearance as the others while growing, but the petals are spathulate, the margins not crispate, and but slightly undulated, while in colour they are of a deep orange and yellow. It is a native of Mozambique and of Natal, and is frequently found in gardens under the name of *G. Plantii.*

Gloxinia.

The *Gloxinia* has now become a very numerous and popular flower. We have hybrid varieties with pendulous flowers, with erect flowers, and with semi-double flowers, and of almost every shade of colour. In a treatise like the present, it is quite impossible to enumerate the whole of the named varieties of this family which are known to possess merit, but we have given some of those which in our opinion are the best. Any one may, however, obtain handsome fresh varieties by purchasing a packet of seed from some good strain, and sowing it in some fine soil, and placing it in stove heat. The culture of the *Gloxinia* is very simple, and like the *Achimenes*, it especially recommends itself to those who have but limited space, as the roots can be stored away on cool shelves in autumn, so as to make room for the winter-flowering plants. The soil best suited for these plants is a mixture of fibrous peat, leaf mould, and well-decomposed sheep manure, with a very liberal addition of silver sand. If a succession of bloom is required, some of the tuberous roots should be potted in January, and successional batches in February and March, and these will yield a good supply of flowers. They should be placed in the stove, and watered liberally but carefully. Some

growers recommend syringing, but we prefer keeping a very moist atmosphere for them in preference. When the flowers are past, and the growth is nearly finished, they may be stood in the open air to ripen well before autumn, but must be protected from heavy rains; and when they are quite ripened they must be stored in their pots, in some moderately cool dry place, until again wanted for potting.

Select erect-flowered varieties.

G. Belle de Meulan.—Pure white, with rich violet purple throat.

G. Brilliant.—Bright crimson, the lobes margined with rose, and the throat rich violet; very distinct and beautiful.

G. Carlton.—Of good size and substance, bright blue, shaded with purple, throat pure white.

G. Comte d'Avila.—Tube white, throat striped and spotted with bluish purple, limb white, spotted with dark blue.

G. Comtesse de Nadaillac.—Of fine form and good habit; flowers pure white.

G. Constance.—Crimson purple, margined with mauve, throat white; a very distinct and effective variety.

G. Cordon Céleste.—A variety of great delicacy, being pure white, with a light blue band round the margin of the limb.

G. Dionysius.—Pure white, with a band of rosy pink round the mouth of the throat.

G. Don Louis de Portugal.—The flowers of this are very attractive; the tube is white, streaked and spotted with carmine, with a carmine violet zone near the mouth, outside of which is another zone of deep violet which gradually passes into blue spots, upon the pure white limb.

G. Favourite.—Bright rose, shaded with crimson, tube white, the throat belted with violet.

G. Hero.—Crimson purple, edged with mauve, and having a rich scarlet blotch on each lobe; a very fine and distinct variety.

G. Juliette Vallerand.—White throat, spotted violet, limb spotted with rich violet.

G. Madame Moreno-Henriquez.—A very handsome flower; the throat white, shaded with straw colour, the zone at the mouth light carmine, and the limb beautifully dotted with blue.

G. Marie Pie.—White tube, the throat spotted and streaked with rose, margin white, with violet dots.

G. Mons. de Vasconcellos.—Throat white, streaked and dotted with violet, limb azure blue, blotched with white and spotted with violet.

G. Mr. Thomas Binney.—Flowers of great size and good substance; the throat is bright red, whilst the colour of the limb is an intense deep crimson.

G. Purple Prince.—In this variety the flowers are very large, and the limb broad, tube white without, the throat and lobes of the limb deep violet purple, margined with blue.

G. Rachel.—Tube white, slightly dotted, limb violet lilac, with a zone in the centre, lobes edged with white.

G. Sarah.—Throat pure white, limb white, with rose-coloured margins, tube white.

G. Scarlet Gem.—Flowers large, tube white, the throat freckled with lilac, and stained with bluish mauve at the mouth, limb broad and even, intense vivid scarlet.

G. semi-duplex marginata.—A beautiful free-flowering variety, of novel form, which may open a new field to hybridisers. Flowers large, throat white, with a blue circle shading to rose, and pure white margin. In addition to these there is an outer row of petals of the same colour.

G. Thomas Lobb.—A fine dark violet blue, shading into a porcelain blue margin; very fine.

G. Triomphe de la Jouchère.—Throat white, rayed and dotted with rosy lilac, limb white, spotted with rich carmine, the border pure white, and a white tube.

Select drooping-flowered varieties.

G. alba grandiflora.—Large and of good form, pure white.

G. Angelina.—Rich rose-coloured tube, lobes of a fine rose, with flakes or bars of white.

G. Anneau Cobault.—Fine bold flower, white ground, laced with blue.

G. Bergeronnette.—Beautiful rich rose, lower lip white.

G. Bird of Paradise.—Flowers rosy lilac, throat creamy white, beautifully spotted with brown.

G. Celestial.—Lobes rich rose, throat encircled with deep violet, base of the tube white.

G. Cerise Violet.—Large bold flower, tube and throat shaded with blue and rich cerise violet.

G. Comtesse d'Oultremont.—Large, dark rose, with crimson throat, spotted at the base.

G. Cordon Céleste.—The base of the tube white, barred and laced with light blue.

G. Dr. Reichenbach.—Tube white, shaded with violet, throat white, shaded with sulphur, and pale blue margin.

G. Duke of Wellington.—Large and very effective, rosy crimson, with spotted throat.

G. Ernst Benary.—Large and of good form, dark lavender, marbled with white.

G. Grand Sultan.—A pretty lively-coloured kind, bright pink, with white throat.

G. Imperialis.—White tube, throat violet purple, spotted at the base with a broad light margin.

G. Imperial Purple.—A rich dark purple, very large, and of exquisite form.

G. Indienne.—Light blue, with white markings and throat.

G. Lady Cecilia Molyneux.—Fine crimson, with white margin.

G. Lady Emily Villiers.—Rich salmon rose, with violet purple belt and white stripes.

G. Lady Victoria Howard.—A fine well-proportioned flower, colour, shaded purple, with white bars.

G. L'Etendard.—A large rosy crimson flower, with purple throat, light margin.

G. Magnifica.—Beautiful carmine, upper lobes bright crimson, with a finely spotted tube.

G. Mogol.—Of very fine form, and a profuse bloomer; flowers of a rich purple crimson, very clear at the margin.

G. Mons. Decaisne.—Very showy and of good form; the throat streaked and spotted with lilac, zone white, dotted with violet at the mouth, limb azure blue, spotted with violet.

G. Mons. Devinck.—White, spotted with rosy violet, throat spotted and streaked with violet, tube rose-coloured.

G. Mrs. Fenn.—An extra fine flower, colour rich crimson, light throat, margin white.

G. Myriostigma.—A distinct kind, deep violet in colour, with white limb.

G. Ne Plus Ultra.—A variety of great beauty. Flowers white, with crimson throat, shading to carmine, base of the throat beautifully spotted and netted with carmine. Very effective and desirable.

G. Peeress.—The flowers of this variety are rich purple, lobes margined with blue, base of the throat spotted white.

G. Princess Beatrice.—Light carmine and rose-coloured

tube, lobes suffused with creamy blush and white streaks, throat flushed with crimson.

G. Punctulata.—Large and well-formed flower, blush white, spotted all over with rosy purple.

G. Rose d'Amour.—Throat cream colour, lobes brilliant rosy crimson; a very desirable kind.

G. Vallerandii.—Tube white, the throat also white, with lilac spots and stripes; the limb white, with large deep bluish purple spots.

G. Violette Neigeuse.—Very large, rich violet, and marbled with white, throat rich golden yellow.

GOMPHIA.

This genus contains a great many species, though few have up to the present time found their way into our gardens. They are widely distributed, being found in Ceylon, Sumatra, the West Indies, in South America, and Madagascar. They are all handsome-growing shrubs, some attaining to even the height of twenty feet, and all have yellow flowers. *Gomphias* require to be potted in a compost of two parts fibrous loam, and one part peat, with a little silver sand, and may receive the treatment of ordinary hard-wooded stove plants. They may be increased by cuttings, which should be inserted in sand, and the pots plunged in strong bottom heat.

G. decora.—A very handsome shrubby plant, which attains the height of ten or fifteen feet in its native country. It has bright shining dark green, alternate, broadly lanceolate leaves, about five inches long, finely serrulate at the margins, and leathery in texture. The flowers are produced on large terminal branching panicles, very dense, and are of a rich bright yellow. As an ornament to our stoves in early spring, it is a most desirable plant, and there is little doubt, if due

care and attention were paid it, but it would become a valuable exhibition plant in May. It is found in some collections under the name of *Gomphia olivæformis*. Native of Brazil.

G. Theophrasta.—A fine plant, eminently adapted for the decoration of a plant stove. It is a native of South America, where it probably becomes a small tree. The leaves are oblong-lanceolate, from ten to twelve inches long, three or four broad in the widest part, and of a bright shining green. It produces much-branched panicles nearly a foot long, on which are borne the clusters of golden yellow flowers, rendering it a most conspicuous object. There can be little doubt it would become useful as an exhibition plant, were it to receive the attention of plant-growers.

Griffinia.

A genus of tropical bulbous plants, differing from *Amaryllis* in little else than their evergreen leaves. Those here given are the best known to us. *G. hyacinthina* is an old inhabitant of our gardens, which had been cast on one side, and is now beginning to be appreciated again. The bulbs should be potted in a mixture of peat and loam, with a little good leaf mould, and plenty of silver or river sand. They should be kept in a high temperature, and in a moist atmosphere when growing, but when at rest should be cooler, and nearly dry. *Griffinias* are usually increased by offsets from the old bulbs, but sometimes from seeds; in the latter case, many new forms may be expected to show themselves.

G. Blumenavia.—The bulbs of this species are rather small. The leaves have slender footstalks, and are oblong-lanceolate, four or five inches in length. The flower scape is erect, bearing in an umbel six or eight flowers, which are

white, streaked with pale rose. It is a charming little plant, of easy culture. Native of St. Catherine's, Brazil.

G. hyacinthina.—A beautiful species, and, like all its congeners, well deserving general cultivation. The leaves are broadly ovate, petiolate, and of a deep green colour. It produces its lovely violet-coloured flowers during the summer months, and lasts a considerable time in great beauty. It is a native of South America.

G. hyacinthina maxima.—This is a very large form of the preceding, the flowers of which measure upwards of four inches in diameter; they are white, tipped with rich blue. Native of Brazil.

HABRANTHUS.

A genus belonging to *Amaryllidaceæ*, and a near relative to *Phycella*. They require the same treatment as *Amaryllis*.

H. fulgens.—This is a magnificent species, supposed to have been introduced from Chili. The flowers are brilliant scarlet, with a rich orange yellow tube, and from four to five inches in diameter; they are borne in clusters of five or six upon the top of the scape. It is well deserving general cultivation.

HEXACENTRIS.

This is one of the many useful and decorative genera belonging to the *Acanthaceæ*, and one which cannot be too highly praised. The soil best adapted for these plants, which are evergreen stove climbers, nearly allied to *Thunbergia*, is a mixture of peat, leaf mould, and sand in equal parts, with a little light loam added. After flowering the shoots should be pruned, and another growth encouraged. In winter the temperature may be reduced to 50° or 55°, the plants being kept tolerably dry, but in the growing season they will luxuriate in

any amount of heat and moisture. Increase may be effected by cuttings inserted under a hand glass, when they root readily.

H. mysorensis.—This fine plant produces rich dark green, opposite, oblong-acuminate leaves, slightly toothed. The flowers are large, rich yellow, with the reflexed lobes of the corolla margined with crimson. It should be grown either trained up a rafter in the stove, or upon a wire parasol-shaped trellis, so that the long pendulous bunches of flowers may be displayed to the best advantage. In this latter way it makes an excellent exhibition plant. It flowers through May, June, and July. Native of Mysore.

H. mysorensis lutea.—A variety of the preceding, and resembling it in habit and general appearance; but the flowers are wholly rich yellow, without the margin of crimson which the other has. It is a very handsome plant, and forms a pleasing variety. Native of Mysore.

Hoya.

A beautiful genus of *Asclepiadaceæ*, popularly known as Honey Plants, and Wax Flowers. They are nearly all scandent plants, and bear handsome waxy-looking flowers, disposed in simple umbels. The footstalks should never be cut off after blooming, as they produce a second crop of flowers. All of them like stove heat and full exposure to the sun. The soil best adapted for them is fibrous peat, with a little loam and sand, adding pieces of charcoal to keep the soil open. Hoyas are most readily increased by cuttings, inserted in sandy peat and kept in a moist heat.

H. bella.—This lovely species is a fine plant for a basket, and has a beautiful appearance thus grown and suspended from the roof of the stove. The leaves are small, opposite,

and dark green on the upper side. The flowers are borne upon many-flowered umbels, which proceed from the axils of the leaves, and are waxy white, with a rosy crimson centre. This is also a beautiful exhibition plant. It is of close, compact habit, and should be in every collection. Native of the East Indies.

H. carnosa.—The leaves of this kind are oval-oblong, pointed, dark green above, and fleshy. The umbels are many-flowered, pendulous; the flowers pinkish white, and very waxy. It will succeed well in a warm greenhouse, but thrives most luxuriously in a stove. Native of Canton.

H. coriacea.—A very handsome species, having the leaves ovate-acute, coriaceous, and dark green. The flowers are produced in large umbels, and are of a brownish yellow colour; its flowering season is from June through the greater part of the summer. These plants have a very pretty effect when several species are trained upon one pillar or rafter in the stove, a plan which also economises the space very much. Native of Java.

H. Cumingiana.—A very distinct species; indeed, when not in flower, it scarcely looks like a *Hoya*. The leaves are closely set, quite thin, obtuse, and dark green. The flowers are white, with a dark brown centre, and very freely produced. It is a very pretty and desirable plant, blooming in early spring. Native of the Philippine Islands.

H. imperialis.—A very strong-growing kind, and remarkably handsome. The leaves are from six to nine inches long, slightly tomentose, and light green. The flowers are very large, waxy, as in the other species, and of a reddish brown colour. Native of Borneo.

H. ovalifolia.—A very handsome species, the leaves of which are fleshy, narrowly oval, and about six inches long, rolled back at the edges, and of a dark green colour. The

flowers are produced in large umbels, and are bright yellow, marked in the centre with red. It is a beautiful kind for training upon a pillar or rafter in the stove. It blooms in June, and continues a long time in full beauty. Native of the East Indies.

H. pallida.—This species has fleshy, ovate, dark green leaves, and the flowers, produced from the axils of the leaves in moderate-sized umbels, are very fragrant, and of a pale yellow or straw colour, with a pink centre. It blooms in June and July. Native of Burmah.

H. Paxtoni.—This beautiful plant somewhat resembles *H. bella* in habit and appearance, but differs in having less fleshy leaves, which are more acuminate, and of a lighter green colour; the stems are also more slender. The flowers are very freely produced, pure white, with a pink centre approaching to red. A very pretty plant, which may be used as recommended for *H. bella.*

H. purpureo-fusca.—This pretty species is very rarely to be met with. The leaves are ovate, slightly acuminate, fleshy, and dark green. The flowers are produced in large close umbels, purplish brown. It is a native of Java.

Impatiens.

To this genus belong many beautiful species, some of which have been introduced to our gardens, but again lost, such as *I. Walkeræ*, with scarlet flowers, from Ceylon, *I. bicolor*, the flowers of which are rich plum colour and very large, from Western Africa, and several others, which we hope to see introduced again. There are a very large number of these lovely plants yet to be introduced, which will add new beauty to our stoves and conservatories. They are of easy culture, thriving well in a mixture composed of

loam, leaf mould, and well-decomposed manure, in about equal parts, with a little silver sand added. They require the young shoots to be frequently stopped, to promote lateral growth, and form a bushy plant; they are free-flowering, and will soon reward the cultivator with a profusion of their handsome flowers, and no less curious seed-pods, which latter have given rise to the generic name, as well as the English one of Touch-me-not, the valves of the seed-pod being elastic, so that if touched when ripe, they suddenly collapse, and discharge the seeds with force. These plants can be increased by cuttings, as well as by seeds; in the former case place them in a moist heat. The seeds should be sown in gentle bottom heat, and the young plants transplanted as soon as they can be conveniently handled.

I. flaccida.—A low-growing plant, forming, if properly managed, a neat compact bush, and producing quantities of its bright-coloured flowers all through the season. The flowers are rich purple, flat, and nearly two inches in diameter; the leaves about four inches long, and dark shining green. Native of Ceylon.

I. flaccida alba.—This is an exact counterpart of the preceding, saving the colour of its flowers, which are pure white, thus forming an agreeable contrast. Moreover, in winter, white flowers are particularly valuable. Native of Ceylon.

I. Hookeriana.—A fine robust-growing species, and one that can be had in great beauty through the whole winter. We have always found young plants of this kind produce blooms much more freely than old ones. The leaves are large, and, like the stems, pale green. The flowers are large, broad petaled, white, streaked with crimson. Native of Ceylon.

I. Jerdoniæ.—This is a lovely dwarf-growing species, much too seldom seen in cultivation. It is of compact habit, with

dark reddish brown, somewhat gouty, stems, and large flowers, produced in abundance from the axils of the upper leaves, and forming quite a crown of bloom, the colour being bright red, yellow, and green. It requires a partial rest during winter. Native of the East Indies.

I. repens.—This is a dwarf compact plant, very useful for planting on rock-work in the stove, as in such a place it grows freely, and forms a pleasing object; it is also well suited for growing as a basket plant. The stems are thick and fleshy, the leaves small, and of a very dark green colour, forming a fine contrast with its large bright yellow flowers. It blooms during the whole of summer. Native of Ceylon.

Ipomæa.

This genus belongs to the large order *Convolvulaceæ*, and consists mostly of climbing plants. The produce of many of the species, such as scammony, jalap, and other drugs, are used in medicine, while the Sweet Potato of America and the South of Europe is the root of a species of this family. Many of the genera, including *Ipomæa*, produce beautiful ornamental flowers, and are well deserving attention; their flowers expand when the sun shines upon them, and close at sunset. The soil best suited for these plants is a mixture of light loam, peat, and leaf mould, in about equal proportions. They are well adapted for training upon pillars or for trellis-work in the stove. The annual species belonging to this genus require sowing in gentle heat in spring; the perennial kinds may be increased from cuttings, with the exception of a few examples, of which *I. Horsfalliæ* may be cited as an example, and which require to be grafted upon some strong-growing kinds.

I. albivenia.—This very handsome species has somewhat cordate leaves, the margins slightly undulated, and dark green

in colour, the veins woolly beneath. The flowers are large, pure white, with the inside of the tube purple. It produces its blooms in August and September. Native of Algoa Bay.

I. Gerrardi.—A fine scandent species, somewhat resembling *I. albivenia.* The leaves are somewhat ovate-cordate, dark green above, paler beneath. It produces its flowers very freely; they are pure white, with a yellow throat, and very fragrant. Native of Natal.

I. Horsfalliæ.—This beautiful plant is admirably adapted for training upon pillars in the stove. The leaves are digitate and smooth, the leaflets lanceolate, entire, and with the margins slightly undulated. Flowers large, and very freely produced in flattened panicles, deep rich shining rose colour. A very showy and highly ornamental plant. Native of East Indies.

I. Leari.—A very beautiful species from Ceylon, and which, when trained upon a pillar in the stove, forms a splendid object. It produces its intensely bright blue flowers in great profusion through the whole summer. Strict attention must be paid it, to keep insects from infesting its leaves. The red spider is its great enemy, which requires to be narrowly watched, or they will soon mar its beauty.

IXORA.

The species of this genus of *Rubiaceæ* are, when well grown and bloomed to perfection, among the finest and most attractive objects of our stoves and flower shows. They are considered by many growers difficult plants to cultivate, but the following mode of treatment has been found to ensure success. In the first place, the *Ixoras* are plants which luxuriate in a high temperature, combined with a moist

atmosphere during the growing season, and until the blooms are set, the temperature should not be lower than 70° by day or 65° by night. Like many other stove plants, *Ixoras* are very liable to the attacks of thrip, red spider, scale, mealy bug, &c., so that great care must be taken to get them free from these pests before the trusses of bloom appear, and to keep them so, because, after the blooms are at all advanced, smoking causes them to fall off. The soil most suitable for potting is good strong peat, to which a little fibrous loam and about one-sixth of silver sand is to be added. Those required for blooming in June should be cut back in January, and started at once; whilst those which are intended for blooming at the end of July or in August, may be left to rest until about the middle of March. While making their growth, they require shade, with a moist atmosphere, and an abundant supply of water at the roots. When the growth is perfect, less shade will be necessary, and the water should be partially withheld from the roots until the flowers are set. If the plants are not required for continual blooming, they may be removed when past their beauty to a house with a lower temperature and less moisture, and less water must also be given to the roots during the wintering or resting season. The whole of the introduced species and garden varieties are well worthy of general cultivation, but those here enumerated are considered the most desirable. They may be readily increased by cuttings inserted in sand and plunged in strong bottom heat.

I. acuminata.—This is a strong-growing species, with lanceolate leaves upwards of six inches in length, tapering to a point at each end, smooth, and dark green. The trusses of flowers are large and pure white. Native of the East Indies.

I. alba.—A close-growing kind, the leaves of which are

ovate-lanceolate, and deep green, producing large dense corymbs of white flowers. Native of the East Indies.

I. amabilis.—A variety somewhat in the way of *I. javanicum*, but still very distinct and beautiful. It is a robust and vigorous grower, producing in abundance large compact terminal corymbs of deep salmon-coloured flowers, which are shaded with orange. A garden hybrid.

I. amboynensis.—The leaves of this plant are large, somewhat ovate in shape, tapering to a point, smooth and wavy in outline, and light green. The trusses of flower are dense, the flowers themselves dark orange colour, richly shaded. It is of good habit, and a most profuse bloomer. Native of Amboyna.

I. Bandhuca.—The leaves of this species are stem-clasping, oblong-cordate, and dark green; the flowers are deep rich scarlet, and produced in abundance. It grows from two to five feet in height. Native of the East Indies.

I. coccinea.—This fine old plant is a native of Java, and ranks as one of the finest of the genus, producing immense trusses of bright red blooms, which contrast beautifully with the brilliant green of the leaves. It blooms also very freely in a young state, and is very useful for table or stove decoration. It is, moreover, an indispensable plant for public exhibition purposes.

I. coccinea superba.—This is an improvement on *I. coccinea*, being more vigorous in growth, and having broader leaves, and larger trusses of flowers. When the two are grown together, it appears quite distinct. Both are well deserving a place in all good collections.

I. Colei.—This will probably make one of the best white varieties for exhibition. The foliage is good, and dark green; the flowers are produced in great abundance in large round corymbs, and are of a pure white. A garden hybrid.

I. crocata.—A handsome plant, the leaves of which are somewhat leathery in texture, ovate-lanceolate, and tapering to a point. The corymbs are many-flowered, and are freely produced, of a light orange colour. Native of China.

I. crocata rutilans.—A much-improved form of the preceding, of robust habit, producing large compact trusses of deep reddish salmon-coloured flowers. Garden variety.

I. Dixiana.—A free-blooming variety, and of a good hardy constitution. The flowers are produced in large corymbs, and are deep orange. It will make a fine exhibition plant. A garden hybrid.

I. Griffithii.—This is sometimes known under the name of *I. hydrangæformis.* It is a large-growing plant, with broad oblong leaves, and bright orange flowers, and is one of the best of the large-growing species.

I. javanica.—This is a plant of good habit. Its leaves are ovate-oblong, tapering to a point, smooth, and light green; the flowers are produced in dense corymbs, and are of a delicate orange colour. It is very desirable on account of its distinctness. Native of the mountain woods in Java.

I. javanica floribunda.—This kind is a good robust grower, and, as its name implies, a free bloomer. The trusses of flower are large, dense, and bright reddish scarlet. It is a most desirable variety for exhibition purposes. A garden hybrid.

I. Lobbii.—A very robust-growing species, the leaves of which are large, and the flowers, which are borne in dense trusses, are rich orange scarlet. It is a native of the Seribu Mountains, Java.

I. odorata.—This is a fine strong-growing plant, having the leaves obtuse-lanceolate, smooth, dark green on the upper side, reddish beneath. The flowers are very fragrant, and creamy rose in colour. Native of Madagascar.

1. IXORA WILLIAMSII.

IXORA, PRINCE OF ORANGE.

I. Prince of Orange.—In this plant we have a very distinct and attractive colour, as well as a dwarf-growing and abundant-flowering habit, qualities which cannot fail to bring it into general favour. Its flowers are produced in dense terminal corymbs, the colour being rich orange red, tinged with violet towards the centre. It blooms profusely when only a few inches high. Of garden origin.

I. princeps.—A very handsome variety, which will probably become of great value as an exhibition plant. The leaves are oblong-acuminate, deep green, with wavy margins. The flowers are produced in dense corymbs, and are of a deep reddish orange colour. It is of good habit, and an abundant bloomer. Native of Java.

I. salicifolia.—This species is one of the very finest of this grand genus. The leaves are on short footstalks, linear-lanceolate, acute at the base, and tapering to a point, from eight to ten inches in length, and about two to three in breadth, smooth, and of a light green colour. The flowers are borne in dense terminal trusses, and are of a clear orange scarlet. It is a most distinct and desirable plant. Native of Java.

I. undulata.—In this species the leaves are large, lanceolate, tapering to a point, smooth, undulated; and the flowers are white, produced in large trusses. Native of Bengal.

I. Williamsii.—This is a superb garden hybrid. It is of free growth, with large bold dark-green leaves. It flowers most abundantly even in quite a young state; the trusses, as well as the individual flowers, are very large; the tubes are deep coral red, while the limb of the flower is a very distinct and pleasing shade of reddish salmon. This is undoubtedly one of the very finest varieties in cultivation.

JONESIA.

J. Asoca.—This splendid genus of *Leguminosæ* is nearly allied to *Amherstia*, and will succeed under the treatment recommended for that plant. There appears to be some discrepancy amongst botanists as to what is *J. Asoca;* here we accept the beautiful plant which flowered under that name at Chatsworth in 1851. It becomes a small tree in the gardens in India; the leaves are opposite, in three to five pairs, lanceolate-acuminate, smooth, and dark green. The flowers are borne in terminal cormybs, and are of a very rich orange, with long exserted crimson stamens. It blooms during the summer months. Native of the East Indies.

J. declinata.—Since our first edition was published, this species has been introduced from the Indian Archipelago. Like the previously-named kind, the leaves are pinnate, consisting of about eight pairs of oblong dark green leaflets, which in a young state are reddish pink. The flowers are produced in large panicles, and rich orange yellow in colour, when arrived at a flowering state. This species cannot fail to be a grand ornament to the plant stove.

LAGERSTRŒMIA.

A beautiful ornamental genus of plants of the *Lythrum* family, so beautiful and so easy of culture that they should be in every collection. They are mostly stove shrubs which require a rest during winter, with only just sufficient water to keep the shoots from shrivelling. In spring water must be given more liberally, and with it more heat, which should be increased as the season advances. When the first growth is made, more air should be given, and the

plants should be fully exposed to its influence to ripen the wood. This being effected, should a larger pot be required, the plants may at once be shifted, using a mixture of peat and loam, in equal parts, with plenty of silver sand, and then started into growth again by giving them a close moist atmosphere; this will soon cause them to push out fresh shoots, and upon these the flowers will appear. No collection of plants should lack these grand though ill-used old plants.

L. indica.—This beautiful species will succeed in a greenhouse, or even in the open border in the southern counties, if slightly protected in winter, but requires a stove to show its great beauty. The leaves are somewhat ovate, acute, and quite smooth. The panicles are terminal, the flowers very numerous, and the petals curiously curled, and of a lively flesh colour. Native of China and Japan.

L. indica alba.—A variety of the preceding, differing only in having the flowers pure white in place of flesh-coloured. It is a charming and most desirable variety. Native of China.

L. Reginæ.—This lovely species attains the height of fifteen feet and upwards in its native woods. The leaves are oblong, dark green; the panicles are terminal, bearing very numerous flowers, which are large, nearly three inches in diameter, and of a bright rose colour, which gradually changes to a lovely purple towards evening. This, as well as the other kinds above mentioned, should be generally cultivated. Native of the East Indies.

LASIANDRA.

The plants belonging to this genus are all elegant stove shrubs, of the order *Melastomaceæ*, and they all bear large

purple flowers, though the young shoots require frequent pinching to cause them to form handsome and bushy specimens. These fine Melastomaceous plants ought to be more extensively grown, for they comprise many splendid species which are cast on one side merely because they are not exhibition plants; but, though many of them are not suited for that purpose, they are highly decorative when blooming in the stove and conservatory. The soil best suited for them is a mixture of loam, peat, and sand.

L. Fontanesiana.—This in its native country is a shrub some six or eight feet high, but under cultivation it can conveniently be kept to any size required. The leaves are oblong, acute, five-nerved, and pubescent on the margins and under side; and the flowers are large, of a rosy purple colour. Native of Rio Janeiro.

L. macrantha.—A magnificent species, and one which bids fair to surpass all the other known members of the genus. It is very free-flowering, producing its immense blossoms upon plants of only a few inches high. The leaves are bright rich green, and of moderate size, while the flowers are between five and six inches in diameter, and of a beautiful deep rich purple. It is easy of cultivation, and will no doubt become a first-class exhibition plant, being a very free bloomer. A much inferior form of this plant has by some means got mixed up with the original; it has originated probably from seed; however, it is a very shy bloomer, and when the flowers are produced they are not more than half the size of the plant whose name it has usurped, hence some have called the original one *L. macrantha floribunda*, which is certainly wrong; it would have been better to call the bad one *parviflora*. Native of Brazil.

LINUM.

L. trigynum.—This beautiful and showy old plant is well deserving a place in every collection. It is often called, and as often treated as, a greenhouse plant, but under such conditions its beauties are never well developed; and although during the summer season it may even be grown out of doors, yet more careful culture must be given if the object is to secure a grand winter's display. To obtain this, the plants should, early in spring—that is, about the end of March or beginning of April—be placed in a warm moist atmosphere, and if they require cutting back it should then be done. As soon as the buds begin to swell, they should be taken out of their pots, so as to remove some of the old soil, and they should be repotted in a compost of good peat and turfy loam, used in about equal proportions, a good portion of silver sand being added. After potting, care must be taken that the plants are not over-watered, for if this should be done they will not make a vigorous start; indeed, upon attention to this point their well-doing will mainly depend. After May, if the plants are well rooted in the pots in which they are to bloom, remove them to a cool house, where a moist atmosphere can be maintained, and where the syringe will be used morning and afternoon, to keep away the red spider, to which this plant is very subject. Before the cold days of autumn come on, remove them to a warmer temperature, and give air upon all favourable occasions. At this season the plants should be carefully examined, to be sure that no red spider is lurking about them, for it is almost an impossibility to clean them when in bloom. *L. trigynum* is a dwarf shrub of free growth, with smooth, entire, somewhat obovate, alternate leaves; and the flowers are large, bright yellow, and disposed in

large racemes. When well grown, such plants, treated as above directed, will yield a continuance of their gay blossoms throughout the winter. Native of the East Indies.

Littonia.

L. modesta.—This plant resembles the *Gloriosas* in habit and general appearance. It is a lovely plant for a pillar or rafter. The leaves, as in *Gloriosa*, are terminated by a tendril, by which the plant clings to surrounding objects; and are bright shining green. The flowers spring from the axils of the leaves, and are bell-shaped, of a rich orange colour. When about to flower it will thrive in an ordinary greenhouse. It is a plant which should be in every collection; for the particulars of its culture, see *Gloriosa*, to which it is nearly allied. Native of South Africa.

Manettia.

A pretty genus of Rubiaceous plants, consisting mostly of climbers, and all of very easy culture. They should be potted in a mixture of peat, loam, and sand, in equal parts, trained upon a wire trellis, or on a pillar or rafter. They are neat-growing and really handsome plants.

M. cordifolia.—This pretty climbing plant has ovate leaves, cordate at the base, and slightly pubescent on both sides. The flowers are tubular, about an inch long, bright scarlet, and produced in great profusion. Native of Brazil.

M. micans.—A very fine and distinct species, forming a strong climber, the leaves, when fully developed, being as much as three inches long, smooth, somewhat ovate-lanceolate in shape, and of a bright green colour. The flowers are very freely produced, and of a bright orange scarlet. Native of Mayna, in Peru.

MEYENIA.

When speaking of *Ancylogyne*, we remarked that the order *Acanthaceæ* contained many beautiful and highly decorative plants, well worthy the cultivator's attention, and none of them is more so than the representatives of the present genus named below,—lovely free-flowering stove plants, which in their native country grow from six to eight feet high, though we find it quite possible to have them in flower when only a foot high, being so easily managed, and so readily submitting to the pruning-knife. The soil which we find best suited for their culture is good decayed leaf mould and peat, with a small portion of fibrous loam, and some silver sand added. A slight rest after finishing their growth is necessary, but they must be only partially dried off; care must also be taken to cut out all coarse, gross shoots in a young state.

M. erecta.—An extremely beautiful plant, producing throughout the entire year lovely dark blue trumpet-shaped flowers, with a rich orange throat. The leaves are opposite, ovate, smooth, dark green. It is a charming plant for home decoration, but on account of the flowers falling so readily if shaken, it will probably never appear in a creditable state at our large exhibitions. Native of West Africa.

M. erecta alba.—This is an exact counterpart of the preceding, but differing in colour, for the flowers are pure white, with an orange throat. It forms a nice companion plant for *M. erecta*, the blue and white flowers yielding a pleasing contrast.

M. Vogeliana.—A fine erect-growing shrubby species, with large, ovate-lanceolate, dark green leaves. The flowers are deep bluish violet, with a yellow throat, about the same size as in *M. erecta*, but of greater substance. There is a deep red-flowered variety of this species, which would be a fine addition to our stoves if introduced. Native of West Africa.

Medinilla.

A beautiful genus of *Melastomaceæ*, requiring treatment similar to that recommended for *Lasiandra*. The species all appear to be natives of the Indian Islands, and luxuriate in a moist atmosphere and high temperature. There are many fine kinds yet to be introduced to our gardens. They should be potted in a compost of two parts fibrous peat to one of loam, with a liberal quantity of sand, and a little well-decomposed manure added.

M. magnifica.—This truly magnificent plant is very ornamental, even when not in flower. The leaves are opposite, broadly ovate, about eight or ten inches long, smooth and rich shining dark green in colour. The flowers are borne in very large terminal pendulous racemes, and are of a rosy pink colour, and continuing a long time in perfection. It usually blooms about May, but as the spikes are produced from the ripened wood of the previous year, it can be retarded by keeping it cool till late in spring. A fine plant for exhibition.

M. Sieboldiana.—A fine winter-flowering kind. The leaves are oblong, tapering to each end, fleshy, and three-nerved. The panicles are erect, bearing white flowers, with purple stamens, which give it a very handsome appearance. It can be had in bloom at various times in the year. Native of Java.

Monochætum.

This genus belongs to the large order *Melastomaceæ*, and requires an intermediate house. The species are easily grown, and make handsome little bushes. The soil best adapted for them is two parts good fibrous peat, one part light loam, and one part leaf mould. Some of the species or varieties are

winter and early spring flowerers, and for that reason are especially valuable.

M. dicranantherum.—This is a very desirable species. The leaves are opposite, ovate-lanceolate, and of a dark green colour. The flowers are numerous, and bright rose colour. Native of Quito.

M. ensiferum.—This is one of the most useful for decoration and cutting for bouquets, and is very free. It continues blooming for a long time in autumn. From Oaxaca.

M. Humboldtianum.—A very compact-growing kind, producing its rich reddish purple flowers in great abundance from October to December. Native of Caraccas.

M. Lemoinianum.—This variety is one of the best for winter and early spring flowering, when its appearance is quite charming, covered with deep rich violet rose-coloured flowers.

M. sericeum multiflorum.—A garden variety, of dwarf compact habit; its flowers, which are rich mauve, being produced in great profusion during the early spring months.

M. tenellum.—A lovely little plant, resembling a small Myrtle in general appearanee. It is easily grown into a handsome specimen, and is very ornamental when covered with its dark purple flowers. Native of Guatemala.

MUSA.

A genus of noble plants, typical of the *Musaceæ*, and whose fruits form the bananas of the tropics. These fruits are most delicious eating, as well as most nutritious. The plants are, for the most part, of gigantic growth, with an inconspicuous inflorescence, and are such as can only be accommodated in the largest plant stoves. That which we mention below is, however, in every respect deserving a place in every collec-

tion, being of moderate stature, and really ornamental. It should be grown in a mixture of loam and well-decomposed manure, in about equal parts, adding a little peat and sand. The main stem dies after blooming, but suckers are produced, which continue the species, and must be taken off the old stem and potted in the before-named compost.

M. coccinea.—This fine species grows about four feet high, with a stem about eight inches in circumference. The leaves are entire, oblong, about three feet long and six inches broad, and of a bright dark green. The inflorescence is terminal, about a foot long, furnished with spathes of a brilliant scarlet, tipped with yellow, the flowers which they enclose being yellow. It flowers during the summer months, and is highly ornamental, lasting for a long time in blossom. Native of Cochin China.

Mussænda.

A very pretty genus of *Rubiaceæ*, the species of which, like *Bougainvilleas*, are indebted for their chief attractions to the large floral leaves or bracts, which are formed by the enlargement of one of the segments of the calyx. Several species are in cultivation, but other very beautiful ones yet remain to be introduced; for instance, one West African species has deep crimson calyx leaves, as large and as rich in colour as the floral leaves of *Poinsettia pulcherrima*, and which would be a splended addition to our stoves. The *Mussændas* are easily grown into handsome bushes, and should be potted in a mixture of peat, loam, and leaf mould, in about equal proportions, with the addition of some silver sand.

M. frondosa.—A handsome plant, with dark green, somewhat ovate, slightly hairy leaves. The flowers are produced in terminal racemes, and are bright yellow, one segment of the calyx being expanded into a large elongate ovate-acute

bract, which is pure white. These bracts are said to be eaten by the Cingalese as a salad. It blooms during the autumn months. Native of Ceylon.

M. luteola.—This very pretty species, which is of dwarf compact habit, was obtained from seeds brought home by Captain Grant, on his return from his expedition to the White Nile. The leaves are about two inches long, oblong-lanceolate, and pointed, thin in texture, dark green above, paler and pubescent below. The flowers, which are produced in terminal corymbs, have a tube an inch long, and fine-lobed limb, which is bright yellow, with an orange centre; and the enlarged calyx leaf is about three-quarters of an inch long, and pure white. It blooms during autumn and winter, and lasts a long time in flower. Native of Africa, about the White Nile country.

PASSIFLORA.

The Passion Flowers are magnificent stove climbers, mostly natives of South America and the West Indies, where they climb from tree to tree, forming festoons of the richest beauty. Many of them, moreover, produce fruits of great size, which are considered delicious adjuncts to the dessert. They are plants of quick growth and very free-flowering. The soil best suited for them is a mixture of light loam and fibrous peat, with a good addition of silver sand. They all require plenty of room, both for roots and also for their branches, and they make beautiful objects in our stoves and conservatories; many of them, indeed, succeed well in the cool house. We here give a few of the best stove kinds.

P. alata.—This fine climber has a four-angled stem and winged branches, and produces large, somewhat cordate, entire, glabrous leaves. The flowers are deliciously sweet, of

a deep crimson colour, having the rays prettily variegated with crimson, purple, and green. It continues blooming from May to September. A very handsome species from Peru.

P. amabilis.—A fine slender-growing plant, of free growth, having ovate-acute, entire, deep green leaves, of thinnish texture, and very abundant flowers, of which the petals are of a rich scarlet, with a white coronal ray. It commences to bloom early in the summer, and continues through the whole season. Very little seems to be known of its history.

P. Belottii.—The leaves of this plant are obtusely three-lobed, and dark green; the flowers are distinct, and of a delicate pink and white. It blooms during the months of June, July, and August, and is a hybrid of garden origin.

P. Buonapartea.—This is very similar in general appearance to *P. alata;* the flowers, however, are somewhat different in colour, being of a beautiful red, white, and blue, without the green which occurs in that species. It is a very desirable stove climber, flowering in June.

P. cincinnata.—A very distinct species, which will probably succeed in a cool house, but as it is of recent introduction we cannot speak confidently. It is a slender climbing plant, with leaves about three inches broad, smooth, and light green, divided into five lobes with serrated margins. The flowers are large, and beautiful violet and white in colour. A handsome and desirable plant from Pernambuco.

P. fulgens.—A free-growing distinct plant, with deeply sinuated leaves. The flowers are medium size, and of a bright scarlet colour. It continues a very long time in flower, and is very handsome. Native of the Amazon.

P. glauca.—This is one of the few species of this genus which is not of climbing habit, but forms a tree in its native place. The leaves are somewhat obovate in shape, large,

deep green above, glaucous beneath. The flowers are yellow, or orange, in the centre, with the ray filaments white. It produces fruits of an oval shape, light yellow in colour, covered with a glaucous bloom, which adds materially to their ornamental appearance. Native of Guayaquil, &c.

P. kermesina.—A lovely free-growing slender kind, with medium-sized, tri-lobed, dark green leaves. The flowers are rich crimson, and most abundantly produced.

P. macrocarpa.—As the name implies, the fruit of this species is very large, averaging between seven and eight pounds weight each. The leaves are oblong-ovate, much like those of *P. quadrangularis*, and the flowers, which also closely resemble those of that species, are of great size, being of a rich reddish purple colour. An excellent stove climber. Native of Rio Negro.

P. princeps.—This beautiful species has the leaves simple, glabrous, cordate-lanceolate in shape, and bright green in colour. It continues flowering throughout the summer, the flowers being of medium size, and of a bright scarlet colour. Native of Brazil.

P. quadrangularis.—This species is commonly called the Granadilla, and is a very fine free-flowering stove climber. The leaves are somewhat cordate at the base, ovate and acuminated. The flowers are very sweet, white outside, red within, the rays being variegated with white and violet. The fruits, when ripe, are six or eight inches in diameter, soft, and quite smooth externally, enclosing within a deep purple pulp, the flavour of which is slightly acid, yet sweet. It is usually eaten with the addition of wine and sugar. To ensure the swelling of the fruits it is necessary to artificially fertilise the flowers, either with their own pollen, or with that of some other kind. Native of Jamaica.

P. sanguinolenta.—This recent introduction will be a

desirable acquisition to our gardens. The leaves are slightly woolly, and divided into two lobes only. The flowers are reddish violet in colour, and as it is a native of Columbia, it will no doubt succeed in a cool stove.

Pentas.

A small genus of very useful free-flowering Rubiaceous plants, not difficult to manage, and easily grown into good specimens. The soil should be a mixture of fibrous peat and leaf mould in equal parts, with a little light loam and sand added. The flowers are very useful for cutting.

P. carnea.—A compact-growing soft-wooded shrub, with soft, opposite, bright green leaves, producing a profusion of large cymose heads of tubular flesh-coloured flowers. It is a fine winter-flowering plant; indeed, it is scarcely ever out of bloom. The flower heads are admirably adapted for bouquet-making. Native of Africa.

P. rosea.—This plant resembles the preceding in all respects, saving the colour of its flowers, which are deep rose. It is also valuable for bouquets.

Petræa.

A genus of *Verbenaceæ*, consisting of plants which are beautiful ornaments to the stove, though but seldom met with—a fact which is much to be regretted, as the flowers are of a colour which is not too plentiful. They are easily managed, and should be grown in equal parts of loam and peat, with a little sand added.

P. erecta.—A handsome shrub, with obovate, somewhat cordate leaves, which are very rough. The flowers grow in pendulous racemes, and are of a bright blue colour, freely

produced in the summer months, and continuing a long time in beauty. Native of South America.

P. volubile.—This species is a fine plant for a pillar or rafter in the stove. The leaves are ovate-oblong, stout, and very rough, producing a harsh grating sound when touched. The racemes are pendulous; the flowers lavender-coloured on the calyx, with a deep violet purple corolla. It blooms during the whole summer. Native of Mexico.

Plumbago.

P. rosea coccinea.—This is a lovely variety of an old and well-known plant, which is good for winter decoration, and is of free branching habit, producing panicles upwards of two feet long of large red blooms during the whole winter. Pot in a mixture of fibrous peat and leaf mould, with the addition of some silver sand, and a small portion of loam. It is a native of the East Indies.

Poinsettia.

An old plant in our gardens now, but one which is admired whenever it is seen in a well-cultivated state. The end of May or beginning of June is a good time to get the old plants started, and if a batch of young plants are to be grown, they should by this time be ready for pushing on. The soil should be fibrous loam, peat, and leaf mould, with a good share of silver sand. They should be grown in a cool house up to the beginning or middle of September, when they should be moved into stove heat, which will cause them to develope their bright scarlet bracts in the course of a few weeks. Other plants should be brought in weekly, so that a succession may be kept up. Care must be taken

not to sprinkle the bracts with water, but the plants, when growing, will take a very liberal supply at the root. This is a most useful plant, and is used by the hundred for dinner parties and balls, the colour being so remarkably attractive amongst other plants.

P. pulcherrima.—This plant is a native of Mexico, and is one of the gayest of all our winter decorators. It may be grown from eight or nine inches to several feet in height, and forms an extremely ornamental object, the large bright scarlet bracts resembling the green leaves in form and size, contrasting strongly with the features of every other plant with which it can be associated.

P. pulcherrima alba.—This variety resembles the species in every respect, saving that the colour of the bracts is white, instead of scarlet. Though not so showy as the more highly-coloured form, it is yet well deserving a place for the pleasant contrast it affords.

Portlandia.

A noble genus of *Rubiaceæ*, which contains several splendid decorative plants. The species, though seldom seen, certainly deserve a place in every stove, on account of their distinct appearance and their large showy flowers. They should be potted in a mixture of fibrous peat and loam, in equal parts, with a good quantity of sand added; and they require plenty of heat and moisture to grow and to bloom them freely. They attain the height of small trees in their native habitats, and would seem to produce a few varieties in a wild state.

P. coccinea.—This fine plant is a native of Jamaica, but is rare even there. It is a shrub growing from two to three feet in height. The leaves are opposite, ovate, smooth,

somewhat leathery in texture, and dark green in colour. The flowers are produced from the axils of the leaves, trumpet-shaped, about three inches in length, and of a bright scarlet colour. It should be in every collection.

P. grandiflora.—The leaves of this species are large, ovate-lanceolate, and of a dark shining green. The flowers are upwards of five inches long, and nearly two inches in diameter, pure white, inclined to red in the throat; they are very sweet in the evening. Native of Jamaica, where it attains the height of twelve feet.

P. platantha.—This is a very free-blooming species, producing a succession of flowers during the whole summer. The habit is the same as that of the preceding, but the plant is dwarfer. The leaves are somewhat ovate or obovate, acute, leathery, and of a deep shining green. The tube is not so long as in *P. grandiflora*, but broader, and the flowers are large, pure white, and very showy. Native country unknown.

RHYNCHOSPERMUM.

R. jasminoides.—This is a very old but a very elegant plant, useful alike for bouquet-making, for home decoration, and last, not least, as an exhibition plant. When used for the latter purpose, it should be trained upon a wire balloon trellis, as it shows itself to more advantage on a trellis of this kind than on any other. When trained upon small trellises, it is an invaluable plant for early forcing, and a succession of its pure white flowers can be kept up from January to June. It also makes an elegant rafter plant. The soil best adapted for its culture is a mixture of peat and loam in equal parts, with a liberal addition of silver sand. *Rhynchospermum* is of free-growing scandent habit, belonging to the same order as *Allamanda* (*Apocynaceæ*). It has small, shining, stoutish,

dark green, opposite leaves; and the flowers, which are pure white and deliciously fragrant, are produced in clusters. With us it succeeds equally well in either a stove or a greenhouse temperature. Native of Japan.

RONDELETIA.

This genus belongs to the order *Rubiaceæ*, which contains so many highly decorative flowering, as well as fine-foliage plants. Amongst the former we may particularly mention *Luculia*, *Manettia*, *Burchellia*, *Gardenia*, *Portlandia*, and *Ixora*. The same order also supplies us with various medicines, the most important of which are quinine and ipecacuanha, whilst others yield valuable dyes, and to one, viz., *Coffea arabica*, we are indebted for our morning beverage. The *Rondeletias* are many of them small-flowered, and of little interest in a horticultural point of view, but those we have here noted are invaluable. They are not easily grown into good specimens, yet they will amply repay any amount of trouble bestowed upon them. We grow them in a mixture of rough fibrous peat and light loam, in about equal parts, with plenty of silver sand, using also some lumps of charcoal intermixed with the soil.

R. speciosa.—A very handsome plant, with somewhat coriaceous, bullate, ovate-cordate, opposite leaves. The flowers are produced in terminal compact trusses, and are deep reddish scarlet, with an orange centre. It blooms during summer and autumn, and continues long in perfection. Native of the Havana.

R. speciosa brilliantissima.—The growth of this variety is similar to the preceding. It is, however, a much freer bloomer; the flowers are produced in large trusses, and are rich scarlet with golden yellow centres. It will be found a

superb variety for purposes of public exhibition when grown into handsome specimens.

R. speciosa major.—This variety resembles the species in general habit, but the leaves are more oval and larger, and the trusses of bloom are also larger, and of a bright scarlet, with orange-coloured centre. It blooms at the same time as the species, and, like it, is very serviceable for cutting for bouquets, &c. Native of the Havana.

SANCHEZIA.

Amongst the many fine plants we have in cultivation belonging to the order *Acanthaceæ*, there are none gayer or more attractive than *S. nobilis*, and its striped-leaved variety. It is a plant of very easy culture, but care must be taken to keep it free from aphis and other insects, which seem to have a great partiality for the young leaves as they are unfolding. The soil should consist of fibrous peat and light loam, in equal parts, with some silver sand added. Otherwise it should be treated as recommended for other stove Acanthads, as *Justicias*, *Aphelandras*, &c.

S. nobilis.—A free-growing, handsome plant, somewhat at first sight resembling an *Aphelandra*. The leaves are opposite, about a foot long, obovate-oblong, tapering to a point, and of a bright dark green colour. It is a most abundant bloomer, producing large dense terminal panicles of bright yellow tubular flowers, which are set in broad crimson bracts, rendering it a magnificent object when in bloom. It is a native of Ecuador.

S. nobilis variegata.—This is exactly similar to the preceding, producing the same gorgeous panicles of flowers, but excelling it in having most beautifully variegated foliage. The mid-rib, and all the primary veins and margins of the leaf,

are of a bright yellow, the ground colour being bright green. It is of vigorous habit, producing leaves from twelve to eighteen inches in length, and is a fine plant for exhibition or decorative purposes. Native of Ecuador.

SANDERSONIA.

S. aurantiaca.—This elegant plant is said by some to succeed well in the open air, but this we have never tried. We have had it bloom admirably for several years in succession, and have always treated it in the same manner as *Gloriosa* and *Littonia*, to which it is nearly allied, although the leaves are not furnished with tendrils. The flowers are very freely produced from the axils of the leaves; they are pendant, somewhat bell-shaped, and of a deep rich orange colour. It is certainly one of the most handsome plants in cultivation. Native of Natal. For culture see *Gloriosa*.

SARMIENTA.

S. repens.—A genus of *Gesneraceæ*, of easy culture, and of climbing or creeping habit, and therefore admirably adapted for growing in baskets, for the decoration of the warm conservatory, or for planting on rock-work, over which it will creep, and thus form a very pretty object. It is of a branching scandent habit, and produces strong wiry roots from the under side of the branches as they grow, thus adapting it for the purposes we have recommended. The flowers, which are freely produced, are somewhat like *Mitraria coccinea* in shape, and dark scarlet in colour. The leaves are opposite, somewhat fleshy and hairy. It is a native of the cool regions of Chili and Peru, and consequently will succeed in a cool stove or warm greenhouse.

SCUTELLARIA.

A genus of *Labiates*, containing many very pretty species, which are extremely useful and showy, but being soft-wooded, rapid growers, and rather apt to lose their lower leaves, they require some little attention in order to grow them into good specimens. They must be potted in a compost consisting of loam, peat, and leaf mould in about equal parts, adding a little sand. The intermediate house will be the most suitable place for them; and by a little pinching at various times they may be had in bloom nearly the whole year.

S. aurata.—This plant grows from one to two feet high, and is covered in every part with fine hairs. The leaves are oblong, cordate at the base, and of a bright shining green. The flowers are produced on long terminal racemes, and are about an inch and a-half in length, the tube light yellow, the limb orange. A free-flowering kind. Native of Mexico.

S. aurata sulphurea.—A variety of the preceding, with ovate leaves, and long terminal racemes of very pale yellow flowers. Native of Mexico.

S. costaricana.—A superb species, with fine ovate-lanceolate, smooth, dark green leaves, serrate at the edges, and long dense terminal racemes of flowers about two inches and a-half long, the tube deep crimson, and the limb orange yellow. It blooms nearly the whole year, and is admirably adapted for cutting for vases, &c. Native of Costa Rica.

S. incarnata.—A pretty little plant, growing between one and two feet high. The leaves are cordate, slightly toothed, hairy below, dark green above; and the terminal racemes are closely set with rose-coloured flowers, about an inch and a-half long. It blooms very freely. Native of Brazil.

S. Mociniana.—The leaves of this plant are ovate-acuminate, green on both sides, and slightly hairy above; the

racemes are large and dense, bearing flowers about two and a-half inches long, the tube of which is of a bright orange scarlet, and the limb deep yellow. A very abundant bloomer, and superb for drawing-room decoration. Native of Mexico.

S. Ventenatii.—This species grows about eighteen inches high. The leaves are ovate-acuminate, and dark green; and the flowers are about an inch and a-half long, of a brilliant scarlet. It is nearly always in bloom. Native of Brazil.

Siphocampylus.

A genus of *Lobeliaceæ* containing many ornamental species, and usually bearing red or scarlet flowers. Some of them, however, have not proved useful in cultivation, probably through being kept too warm, as an intermediate house suits them best. They are of easy culture, and should be potted in a mixture composed of equal parts good peat and loam, with a liberal addition of silver sand. The few species we have noted are some of the most desirable, but there are others which may be added at the pleasure of the cultivator.

S. amœnus.—This pretty plant succeeds well in the intermediate house, being found at considerable elevations. It is of erect habit, with somewhat downy branches, and oblong-lanceolate, bright green leaves, which are serrated on the edges. The flowers are freely produced, and rich orange red in colour. Native of Brazil.

S. Humboldtianus.—This is an elegant small bush, growing from two to three feet high, and being furnished with alternate leaves, from half-an-inch to an inch in length, ovate-lanceolate, finely serrate at the margins, of a dark green colour on the upper side, and covered with short hairs beneath. The flowers are pendulous, between two and three inches long, and of a rich scarlet, with orange throat. This is sometimes

met with under the name of *S. fulgens*. It is a native of Peru.

S. microstoma.—A very desirable free-flowering species, the leaves of which are somewhat oblong, slightly serrated at the edges, quite smooth, and of a bright green. The flowers are rich crimson, nearly two inches long, and produced in terminal umbels. It blooms abundantly during the whole winter season in the stove, but should have a cooler place in summer. Native of New Grenada.

Spigelia.

A genus of handsome plants belonging to the order *Loganiaceæ*. There are several kinds in cultivation; the one here described is a stove plant, which should be in every collection. The soil which suits them well is a mixture of loam and peat, with a little sand.

S. splendens.—A beautiful free-flowering plant, the leaves of which are about five inches long, dark green, somewhat oblong or obovate in shape, and tapering, having a few scattered hairs on the veins. The flowers are upwards of an inch long, tubular, and of a rich scarlet, produced in profusion, on recurved spikes, in double rows, and remain in beauty for a long time. No collection of plants should be without this lovely gem. It is a native of Costa Rica.

Stephanotis.

An old but very useful and handsome stove climber belonging to the *Asclepiadaceæ*. It is a useful plant, both for home decoration and also for exhibition purposes. When required for the decoration of the stove it should be trained up a pillar or upon a wire trellis, where it will produce its

very fragrant pure white flowers through the spring and summer. The soil it succeeds best in is a mixture of good light fibrous loam and peat, with plenty of silver sand, to which may be added a little leaf mould and well-decomposed manure. If wanted for exhibiting, the best form of trellis is a large balloon made with wire; and for this object the plants should be kept dryer and somewhat cooler during the winter to retard their flowering. If required in bloom in May it must be started into growth in January.

S. floribunda.—A scandent stove plant, the leaves of which are opposite, obtuse, ovate, leathery in texture, and of a rich shining dark green colour, paler beneath. The large pure white waxy-looking flowers are produced in clusters, and are very fragrant; they are very useful for bouquet-making. It is a plant no stove should be without. Native of Madagascar.

Stephanophysum.

S. Baikiei.—This is a very pretty member of the Acanthaceous family. The leaves are opposite, ovate, tapering to a point, pale below, dark green and rather rough above. The flowers are produced in dense branching racemes, and are tubular, about two inches long, and of a deep crimson red. It is one of the most profuse winter-flowering plants ever introduced; indeed, the greatest difficulty consists in inducing it to grow instead of flowering. It is said to have been introduced from the River Niger, West Africa.

Stigmaphyllon.

This is a genus of *Malpighiaceæ*, an order which contains many very peculiar plants. The species here noted is a fine climber, and well deserving cultivation in every stove. It

requires to be potted in a mixture of two parts loam, and one peat, with a liberal addition of sand.

S. ciliatum.—The leaves of this plant are cordate, smooth, covered with a glaucous hue, and ciliated on the edges. The flowers are produced in large umbels, and are rich orange yellow in colour, somewhat resembling an *Oncidium* bloom. It continues blooming during the whole summer. Native of Brazil.

STREPTOCARPUS.

This is a very pretty and interesting genus of *Gesneraceæ*, consisting of low-growing, free-flowering, perennial plants, with radical leaves. They should be potted in rich, well-decayed vegetable mould, made tolerably sandy, and should be placed in a rather shaded moist place, near the glass. The leaves must not be syringed, for although they like plenty of water, they do not like it over their leaves.

S. Saundersii.—This extraordinary plant makes only one leaf, which appears to be a continuation of the cotyledon; this leaf is sometimes as much as twelve or eighteen inches long, and upwards of six inches in breadth; thick, tomentose, deeply and coarsely toothed at the edges, and of a dark heavy green on the upper surface, dull red beneath. It is a most abundant bloomer, producing enormous quantities of branched panicles, laden with its delicate lavender-coloured flowers, which have a deep bright blue throat, with a streak of yellow down the middle. Native of Natal.

TABERNÆMONTANA.

A genus of *Apocynaceæ*, consisting of very ornamental plants, somewhat resembling *Gardenia* in appearance, but belonging to a very distinct order. The treatment recom-

mended for those plants will, however, suit these admirably.

T. coronaria flore pleno.—A very compact-growing shrub. The leaves are dark shining green; and the pure white double flowers are produced during the winter months, as well as in summer, and are very useful for cutting for bouquets. Native of the West Indies.

T. grandiflora.—This is a somewhat rare plant in collections, but is well deserving general attention. It is an evergreen shrub, some two or three feet in height, furnished with opposite, subovate, bright dark green leaves, about three inches long. The flowers are produced in clusters, the tube of corolla being two inches long, and, as well as the limb, of a rich dark yellow. It is a native of Venezuela, and produces its flowers in August and September.

Thunbergia.

A fine group of the order *Acanthaceæ*, consisting of climbing plants, often of great beauty. Some of them, such as *T. alata* and its varieties, are best treated as annuals, and succeed well in a greenhouse, or even in the open air in the summer season, if raised in heat early in spring. The species we have here described require stove heat, and some of them make splendid objects when trained up the rafters. The soil for potting them in should be good fibrous peat and loam, in equal parts, with the addition of some silver sand and a little well-decomposed manure.

T. fragrans.—A very handsome small-growing climber, with dark green leaves, and producing an abundance of pure white flowers during the whole season, especially in winter, when white flowers are doubly valuable. It is a native of the East Indies.

T. Harrisii.—This is a plant of great beauty, and in its native country, when rambling over the jungles, it must have a magnificent appearance. It is a climbing or trailing plant, with the leaves dark green, ovate-lanceolate, with a sharp point. The racemes of flowers are produced in the axils of the leaves, and also at the ends of the shoots, and support quantities of its large blossoms, which are bright purplish blue in colour, pale beneath, the throat yellow, fading into white. It is a very free-flowering and highly ornamental plant, which deserves general cultivation. Native of Rangoon and Moulmein.

T. laurifolia.—A very fine species, somewhat resembling the preceding in general habit. The flowers are very large, and of a pale blue colour, with a yellow throat. It is a very free flowerer, and as it produces its blooms at various times in the course of the season, should become useful as an exhibition plant, as well as for home decoration. Native of the Malayan Peninsula.

THYRSACANTHUS.

T. Schomburgkianus.—This fine Acanthaceous plant, which is perhaps better known under the name of *T. rutilans*, forms one of the most attractive and graceful plants for winter blooming with which we are acquainted. The leaves are oblong-lanceolate, tapering to a sharp point, and dark green in colour. The flowers are tubular, bright scarlet, borne in long pendulous racemes, which give the plant its peculiar graceful and elegant appearance. It is an abundant bloomer, producing its vivid flowers through the whole winter and spring months, and is a most glorious object for table decoration. The soil we find best adapted for it is a good light loam, with the addition of some well-decomposed manure

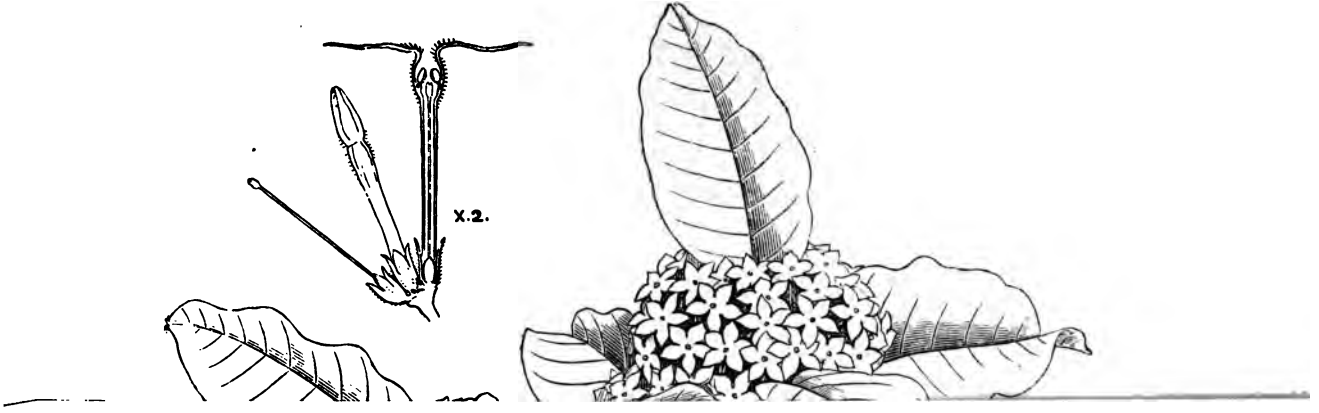
and leaf mould, and a portion of silver sand. The plants should be kept growing as fast as possible until they attain a considerable size, and then kept root-bound, which will induce them to blossom more freely. After this, if the drainage is kept in good order, a little fresh soil is all that is necessary for a year or two, and then a batch of young plants should be ready to succeed the older ones. It requires a liberal supply of water and heat. Native of New Grenada.

Torenia.

T. asiatica.—A beautiful plant belonging to the *Scrophulariaceæ*, and an old inhabitant of our hothouses. The leaves are opposite, somewhat cordate, tapering to a point, serrated at the edges, and of a bright lively green. The flowers are produced from the axils of the leaves, and are tubular, with a four-lobed spreading limb, deep porcelain purple, the lobes being tipped with white on the inner side. It is of trailing habit, and makes a lovely basket plant, while, if potted in peat and leaf mould, with a little sand, it will grow and flower in the greatest profusion all the summer. Native of the East Indies.

Toxicophlea.

This is a South African genus of Apocynacea, containing but few species. The bark of these plants is said to be poisonous, and is used amongst the Hottentots as an ordeal; they require the heat of a cool stove or intermediate house. The pots must be well drained, and the soil should be composed of about two parts loam, one part peat, and a good portion of sharp sand. Propagation is effected by cuttings, layers, and seeds, when the latter can be obtained.


X.2.

T. spectabile.—A handsome compact-growing plant, which in habit and appearance much resembles an Ixora; the leaves are opposite, elliptic, and dark green; flowers tubular, with a spreading five-lobed limb; pure white, deliciously fragrant, and produced in a large terminal corymb, and in smaller ones from the axis of the leaves, thus forming a dense raceme of bloom upwards of a foot in length. It blooms during spring and early summer. Native of South Africa.

TYDÆA.

This genus is now recognised as thoroughly distinct from *Achimenes*, our old acquaintance *A. picta* being the type. We have a considerable number of *Tydæas*, some introduced species, but the greater part of them garden hybrids and varieties. They are very handsome winter and early spring-flowering plants, and deserve every attention, on account of the manner in which they enliven the hothouse during the dreary winter months. If potted in the compost recommended for *Achimenes*, they will succeed well; but it is necessary always to bear in mind that *Tydæas* will not suffer drying like *Achimenes*, as they only make slender underground stems, and not scaly tubers as the *Achimenes* do. After being cut down, therefore, and allowed a short rest, they must be started into growth again. They may be had in blossom during the whole year, if a little care is exercised in starting them successively. Subjoined is a selection of a few of the best of these charming plants.

T. Adonis.—A pretty variety, the flowers of which are white, mottled with vermilion.

T. Beauty.—The flowers of this are yellow in the centre, with the border scarlet, marked with rich crimson spots and bars.

T. Countess of Ilchester.—This is a remarkably handsome kind; the flowers are rich crimson, bordered with violet, and the throat creamy yellow, striped with carmine.

T. Etna.—A very handsome form, the flowers rich scarlet, striped with black.

T. Formosa.—This has flowers of a rosy lake, spotted with crimson, and continues in bloom for a very long time.

T. insignis.—Flowers light crimson, with confluent spots of intense crimson.

T. Lindeniana.—A handsome species from South America, having the leaves beautifully striped with silver. The flowers are white, having a yellow throat, and violet-coloured stains on the lower lip.

T. Ophir.—Very distinct and handsome, having rich vermilion flowers, spotted with black, the lower petals being also spotted with yellow.

T. Polymnie.—This is both handsome and very peculiar. The flowers are scarlet, spotted with carmine, and the tube white.

T. Rachel.—An exceedingly free bloomer; flowers scarlet, streaked and spotted with dark purple.

T. Thalie.—A very distinct variety; flowers citron-coloured, with vermilion spots.

T. tricolor.—The flowers of this variety are white, beautifully spotted with light purple, the tube bright scarlet.

T. Vesuvius.—Flowers bright crimson, streaked and veined with blackish maroon; very handsome.

Urceolina.

U. pendula.—A peculiar but handsome plant, very remarkable both for the colour and shape of its flowers. It

is a member of the *Amaryllidaceæ*, and a native of the high mountain regions of Peru, and will therefore stand in the cool house well during the time it is in bloom, though, as with us it is generally growing during the winter months, it will no doubt be benefited by being kept in the stove or intermediate house in its growing season. In general appearance the plant resembles *Eucharis*, but the flowers are produced on a scape from twelve to fifteen inches long, from the summit of which they depend most gracefully; they are of a bright golden yellow, tipped with green and white. The *Urceolina* should be potted in a compost consisting mainly of fibrous loam, with some good decomposed manure, a little peat, and some silver sand being added. It has been distributed under the name of *U. aurea*, but we believe the name adopted by us is the correct one. This plant is of easy culture, and should be in every collection; it will make a charming companion for *Eucharis amazonica*, independent of its own merits.

STOVE AQUATICS.

WHEREVER accommodation can be afforded, some few water plants, either stove or temperate species, should be grown. The *Nymphæas* are splendid objects during the whole season, and with comparatively little trouble afford a grand display, totally different to that of any other class of plants. If building a house for these plants, we should prefer to have it nearly square, with a ridge and furrow roof. The tank, which would be in the centre, should

also be square, and may be either placed below the surface, or built up with brick-work, and covered with cement, or formed of slates fitted together so as to hold water. When built up in this way, it should be about three feet above the ground level. We think this latter plan is far preferable to that of placing it below the level, as it brings the flowers nearer to the eye, and consequently sets them off to much better advantage. We would also have small tanks at the sides for growing smaller plants, such as *Limnocharis*, *Villarsia*, *Trapa*, *Pontederia*, *Ouvirandra*, *Pistia*, *Vallisneria*, *Papyrus*, and the many other plants of great beauty which are obtainable, and which serve to make a collection of aquatic plants one of the most interesting features in any garden. For the *Victoria* house, we prefer a circular tank, which should not be less than thirty feet in diameter, if full justice is to be done to this regal Water Lily. The house should also be circular, or of an octagon shape, with no other tanks in it, but just a walk all round the tank. We have frequently seen such a one as we describe completely full of the fine leaves of this plant. We have seen the plant grown finely in a square tank in a lean-to house. It is quite necessary to secure motion in the water, and this is best effected by providing that a current should run through the tank to carry away the confervoid growth which is sure to show itself, causing the surface of the water to be very unsightly. The same means will also serve the purpose of keeping the main body of water at a proper temperature. For the purpose of securing this motion some use a wheel, but this has always seemed to us a clumsy contrivance, and we have seen used in preference a small pipe, with a broad spreading nozzle, which is so placed as to rise a little above the surface and to point downwards, by which means, when the

water is turned on, it agitates the whole mass, and produces a current throughout the tank, the surplus water being carried off by means of a waste-pipe fixed at the opposite end or side. In treating of the *Victoria* (page 168), we recommend several levels for the water, according to the size of the plant. In order to secure this, and to be able to run off surplus water, the waste-pipe must be made in lengths and jointed, so that when a rise of water is needed a joint may be screwed on, this being repeated as required until the top of the tank is reached. Such exotic ferns as *Acrostichum aureum*, being semi-aquatics, may be grown in association with the true water plants.

Euryale.

E. ferox.—This is a very elegant plant, with large peltate-orbicular leaves, covered on both sides with long spines. The flowers are scarcely as large as in *Nymphæa cærulea*, and are of a deep violet colour. It requires to be treated in the same manner as *Nymphæa*, but, as it is an annual, some of the flowers should be fertilised, to insure seeds for the following season. Native of lakes in the East Indies.

Limnocharis.

L. Humboldti.—This very handsome plant should be potted in good rough loam, and placed in a shallow part of the aquarium. The leaves are ovate, smooth, and of a bright light green colour, and float upon the surface of the water. The flowers are large, bright yellow, and produced very freely all summer. Native of Brazil.

Nelumbium.

This splendid species can be grown in tubs or cisterns, as the leaves and flowers both rise several feet above the water; during the resting season they may be allowed to get tolerably dry, though not quite so. Good rich loam and well-decomposed manure suits them, but they require strong heat to induce them to flower.

N. speciosum.—This is the sacred Bean of the Egyptians. The leaves of this fine plant are about eighteen inches in diameter, peltate, orbicular, light green in colour, and rising upon slender stems, which grow about four feet high. The flowers rise to the same height as the leaves, and are very large, of a delicate rose and white, and very fragrant. It is a common plant in China, where it is held in high estimation, and it is also widely distributed through the East Indies.

Nymphæa.

A lovely genus of plants, which should be grown wherever accommodation can be afforded them. They will grow and bloom most profusely in strong heat, but will thrive almost as well if treated more temperately. The best plan is to plunge them into water at a temperature of about 80° or 85° to start them, and after they have attained some size, gradually inure them to cooler treatment. The soil we have found them succeed well in is good rough turfy loam and well-decomposed manure, in about equal parts, adding a good portion of river sand. We prefer large round wicker baskets to pots, to grow them in, as they can thus be supplied with more soil than in any pot that can be used, and the baskets last well for a season. In winter, when the roots

are resting, they must be kept in water and not dried; the temperature during this resting period should not be lower than about 45°.

M. cærulea.—A lovely plant, which was no doubt held in great estimation by the ancient Egyptians, as it so frequently occurs on their monuments and in their hieroglyphical writings. The leaves are peltate, nearly entire, bright green; the flowers are blue, most delicately scented, and produced abundantly all through the summer. Native of Egypt.

N. dentata.—This magnificent species has very large, peltate, dark green leaves, serrated at the margins. We have seen them grown upwards of two feet in diameter, and the plants twenty feet across. The flowers are of great size, measuring from six to fourteen inches in diameter, many-petaled, and pure white; it is a most profuse flowerer. Native of Sierra Leone.

N. Devoniensis.—A splendid free-flowering variety, with leaves somewhat like the preceding. The flowers are a brilliant red, and measure five or six inches in diameter. If allowed, it will bloom without intermission the whole season. A garden hybrid.

N. gigantea.—The leaves of this species are peltate, smooth, and dark green. The flowers are of a beautiful blue. Up to the present time we have not seen flowers more than six or seven inches in diameter, but in its native country we are told it attains to over twelve inches. Native of Australia.

N. Lotus.—This is a very pretty species, somewhat resembling *M. dentata;* the leaves are peltate, serrated at the margins. The flowers are white, continuing all summer. Native of Egypt, where it was held sacred. Its seed was often ground and eaten by the ancient inhabitants of that country.

N. rosea.—This plant resembles *N. rubra*, but is not quite so strong in its growth. The flowers are rose colour, and very handsome. Native of the East Indies.

N. rubra.—A fine and distinct kind. The leaves are slightly peltate, somewhat ovate, sharply toothed, downy below, and dark bronzy green above. The flowers are nearly as large as those of *N. dentata*, and of a deep crimson red colour. Native of the East Indies.

N. scutifolia.—The leaves of this species are peltate, deeply sinuated, smooth on both sides, and dark green above. The flowers are bright blue, and sweet scented. It is distinguished from *N. cærulea* by its much larger and many-petaled flowers, and by the petals being more obtuse. In some collections this is grown under the name of *N. cyanea*. Native of the Cape of Good Hope.

N. thermalis.—In this species the leaves are smooth on both sides, peltate, sharply toothed, and dark green. The flowers are pure white, and very freely produced during summer. It is found growing in Hungary, in the warm River Pecze.

Victoria.

This truly magnificent Water Lily can be grown in very few establishments, on account of the immense space it requires in order to develope its beauties. The tank for growing this plant should be *at least* twenty feet in diameter (but is better if about thirty), and circular; it should be from three to four feet in depth, and heated with four rows of four-inch hot-water pipes. Some have pipes under the plant itself, but this is open to objection, as we have known the roots (and consequently the plant) much injured

by coming in contact with them. The soil should be good mellow loam and well-decomposed manure, in about equal parts, and mixed with a good portion of river sand and a little peat. The quantity required will be about two loads; it should be well mixed, and placed in the tank before the water is admitted, after which the water should be run in, and be allowed to stand for a week or two, so that the soil may become well warmed before an attempt is made to put the plant into it. The seeds should be sown early in January, in a small tank where a good command of heat is to be had, and a uniform temperature of about 85° can be maintained. We have always found that the seeds vegetate very much quicker if a little soil is put at the bottom of the tank, and the seeds are just dropped on to it, than when sown in pots. As it is desirable to get them up quickly, this plan should be adopted by those intending to grow the plant. When the young plant has made four or five leaves it must be lifted, and potted into the soil recommended, but as very little can be put into the small pots that are first used, some pieces of broken pots or stones should be laid on the surface, to keep it firm and enable the young and small roots to take hold of the soil; this operation must be repeated whenever the pots are getting filled with roots, never forgetting to have the soil well warmed before potting, for the least chill endangers the well-being of the plants for the entire season. About the end of April, if the season is fine, or beginning of May, if it be dull, the plant selected for flowering, and which will now have leaves from one and a-half to two feet in diameter, should be placed in the soil, already made thoroughly warm for its reception, in the large tank. The crown of the plant should be about nine inches under the water when first planted, but as the crown gains strength it will soon

come near to the top; to provide for this emergency, when planting, the water in the tank must be lowered to the proper height, and as the plant requires deeper water it must be added. After planting out a most anxious time commences for those engaged in the cultivation of the *Victoria*, for if the plant should be checked through sudden changes of temperature in the water—either over-heating, or allowing it to fall below its proper heat, or carelessly admitting too great a quantity of fresh water—the chances are that not only will it make disfigured leaves for a considerable time, but it may have the effect of so retarding it that little or no flower is produced, and thus, after all the expense, no pleasing return is made. If all should, however, go well after planting, which will be the case if strict attention be paid, by the middle of June the leaves will present a noble appearance, having then nearly approached their maximum size, and after that the flowers will soon make their appearance. The largest we ever saw this plant was a little over seven feet; it is more frequently seen about six feet six inches in diameter of leaf, and twelve to sixteen inches in diameter of flower, and presenting in this state a truly magnificent appearance. The flowers are only of two days' duration; the first day it will open about six P.M., and continue open until nearly the same time the next morning, after which they rapidly close, and remain so until evening again. In this stage it is deliciously fragrant, emitting its perfume to a long distance, the petals being erect and pure snow white. When it opens the second evening the petals have undergone a complete change in colour, and the fragrance is gone altogether. The flowers now reflex so that the points of the petals nearly touch the water, and are rich rosy pink, forming a beautiful coronet. Towards morning the flower closes, and

in the course of the day sinks below the surface of the water to ripen its seed. Only one flower, as a rule, is open at one time on this plant, but, if in vigorous health, there will not be more than one evening's interval, and not always that, and we have seen, though very rarely, two flowers open together, one in the first and the other in its second stage; when seen thus it is grand in the extreme, and would repay even double the trouble it causes.

This noble and gigantic Water Lily was found by Sir R. Schomburgk, in the year 1826 or 1827, growing in the tributaries of the Amazon River; in this country it has almost always proved of only annual duration, though one or two instances are on record of its living two years. The temperature of the water it is growing in should never fall below 80°, and in the day-time should rise to about 85°; the atmosphere of the house about 75° to 80° by day, and 68° at night.

GREENHOUSE PLANTS.

INTRODUCTION.

THE previous portion of this book has been devoted to those plants which are natives of tropical countries, and consequently require artificial heat to enable them to grow and display their beauties in a cultivated state. Now we have to treat of plants which, although some of them come from tropical lands, are yet found growing at considerable elevations, and consequently do not require much more than protection from frost or cold piercing winds. The beautiful flowering plants from all parts of Australia (except the extreme north) all succeed well in an ordinary greenhouse during winter, and enjoy exposure to the open air throughout the summer. The *Ericas* and other fine plants, coming from the Cape of Good Hope, are equally at home in a similar situation. Indeed, the vegetation of these two countries bears a considerable resemblance to each other, though one genus so common to Australia—*Eucalyptus*—has not been found in the Cape colony.

Australia abounds in beautiful plants, which, in many instances, are quite peculiar to that portion of the globe, and

which form fine ornamental objects in our greenhouses. The species of the *Epacris* order are almost entirely confined to that country, which also contains large numbers of the *Myrtaceæ*, *Rutaceæ*, and *Leguminosæ*, the latter, in many instances, forming beautiful, compact, free-blooming shrubs, as illustrated in the *Acacias* which abound there, and form fine ornamental shrubs and trees, the ornamental capabilities of of which were much more thoroughly appreciated a few years ago than they are at the present time. Then, throughout the winter and spring, one might see conservatories and greenhouses gay with their gorgeous masses of golden flowers, forming splendid backgrounds for the display of other smaller-growing and more delicate early-flowering plants; but now, these are scarcely ever to be seen, although nothing half so effective has been found to supply their place. This fault will, we trust, ere long be remedied, so that the fine old *Acacias* may again become, as they formerly were, prominent objects in our winter and spring display of greenhouse flowers.

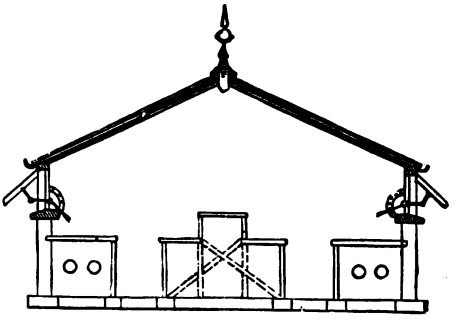
Many of the plants from New Holland and the Cape are similar in habit and colour of flowers, and it would be perfectly impossible for a person of limited space to grow all, therefore we have briefly described in these pages only the most desirable, and from which a choice collection may be formed.

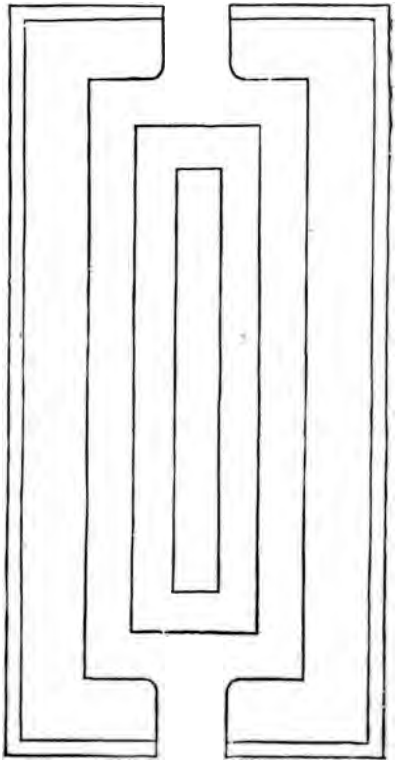
Such plants as *Pelargoniums*, *Fuchsias*, *Calceolarias*, and others of a like nature, have not been treated in detail in this work, but have been collected under the title of "Florists' Flowers and Soft-wooded Plants," the remarks being confined to their culture only, not from any wish or intention to depreciate their merits, for they are most attractive and highly ornamental objects in their season; but the varieties are so numerous, and the differences in some cases so very slight—

and as improvements in form, habit, and colour are so rapidly being effected by cross-breeding and hybridising—it will be evident to all that no good could result from swelling these pages with descriptions of varieties which may be superseded in the course of some ten or twelve months.

GREENHOUSES.

WE here give a transverse section and ground plan of a house suited for the cultivation of plants from the Cape of Good Hope, New Holland, New Zealand, Chili, or from most of the temperate regions of the globe, being such as are usually denominated Greenhouse Plants. The dimensions and general form of the house are the same as in the structure recommended for Stove Plants, but with this difference—that in the Greenhouse the side lights are all made to open, and the lantern is not used, but the upper sashes of the roof slide up and down in the ordinary way. The underground system of ventilation should be applied to this structure as well as to the Stove, as it affords means of maintaining a pure and healthy atmosphere in the interior without injury to the plants, even in the most severe weather. Fresh air is most essential to the well-being of Greenhouse Plants, but cold draughts must be avoided, for nothing is more injurious to plants of any kind. Indeed, such conditions often result in their speedy death. This must be carefully attended to in giving air to plant houses.





In heating such a structure as that we have here recommended, two rows of pipes for hot water will be found sufficient; and even these must not be brought into use unless artificial heat is absolutely necessary, for too much warmth in winter is very apt to cause such plants as *Ericas*, and, indeed, many others, to start prematurely into growth, to the total ruin of their flowering. Dampness in the air during the winter months is far more injurious to Greenhouse Plants than a somewhat low temperature; and heat should be applied to the house occasionally during the day-

time, in order to dry up any superabundant moisture, always taking the precaution to have plenty of ventilation, both at the top and sides.

THE CONSERVATORY.

IN various places in this work the Conservatory is mentioned, and plants are recommended for its decoration; consequently a few remarks concerning this structure may be considered necessary. In its general features the Conservatory differs but slightly from the Greenhouse, but it is usually connected with the mansion, in order that the proprietor and his family may be able to enjoy the beauties of the plants, when the weather is too inclement to permit of their visiting the stoves and greenhouses, situated, it may be, in various distant parts of the garden. When the Conservatory is attached to the mansion, it is frequently built under the supervision of the architect, and is so constructed as to harmonise with the residence, but too often without any regard to its adaptability for the purpose for which it is intended. This often leads to great disappointment. How often do we hear the remark, "Our Conservatory is so ill-constructed that nothing grows well in it, and it is almost certain death to plants which are placed in it when in flower." This would not occur if architects would take into their counsel the practical and intelligent gardener, who would be able to point out to them the requirements of the plants which are to occupy the house.

If the Conservatory is large, the ridge and furrow form of roof is often adopted, but we prefer the span-roof to any

other. In Conservatories the plants are usually planted in prepared borders, or if all are not so planted, some of the more important are so treated, in order that they may form permanent and striking objects, and thus add to the beauty of other plants which are brought in from the Greenhouse during their flowering season. In forming borders for the reception of plants, it is necessary in the first place that the ordinary soil should be taken out to a depth of about four feet. From twelve to eighteen inches is then to be filled in with broken bricks and similar material, such as to form and maintain a perfect drainage. Above this, turves of fresh-cut peat are to be laid, with the grassy side downwards; while the remaining portion is to be filled up with good soil, of the quality and texture most suitable for the plants intended to be grown. No manure should be used, as this is apt to cause rank growth; this is not required in the majority of Conservatory plants, which then soon become too large for the building. The object is rather to encourage the production of good shapely plants and flowering wood. If any little stimulus should become necessary during the growing season, it can easily be administered in a liquid state.

The whole of the plants should be so arranged that a pleasing and varied scene may be presented to the eye; and this can only be produced by a thorough knowledge of the habits and flowers of the kinds introduced, and which should be well studied before a permanent work of this kind is commenced.

In Conservatories of less extent, it is rare that any but a few climbers are planted out, the other plants being usually arranged on stages, so placed as to suit the character of the structure. The plants in such cases only occupy this position during the blooming period, being brought in from the Greenhouse and Frames as required. Many Greenhouse

plants that will bear heat should during autumn and winter be placed in the stove to induce them to flower early, so that the Conservatory may be as gay as possible during the dull months, at which time this part of the garden is the most enjoyable to the ladies of the family, who are often prevented by wet or inclement weather from visiting plant houses, which are situated at a distance from the mansion.

PITS AND FRAMES.

MANY amateurs, who possess a great love for plants, are deterred from indulging their tastes, because they have no greenhouse. They either have no suitable place for one, or do not feel justified in incurring the necessary expenditure for its erection. To persons who are thus situated we would recommend the use of Pits or Frames, structures that can be erected at but little expense, and in which many very beautiful plants can be grown with very great success. Indeed, pits and frames are quite necessary, even to those who possess both stove and greenhouse, as the tender greenhouse plants and many of the hardier stove plants thrive best in cool pits in the summer season. They are also most serviceable for the reception of tuberous-rooted plants after the blooming season is past. In these they can be carefully attended while finishing their growths. The dead and decaying leaves, which must necessarily be seen upon such plants while they are passing into the dormant state, will not give an untidy or unsightly appearance to the specimen houses or the conservatory.

To the amateur who has no greenhouse, a few words will not be here out of place. Pits are made by building up an enclosing wall of brick-work, and placing glass sashes (or lights as they are called) over the space so enclosed. A very useful kind of pit for plant culture may also be made with turf walls—*i.e.*, walls built up of square sods of turf, and covered with glass sashes, but the appearance of these is not so good, neither are they so substantial as when built with brick. The height will be regulated by circumstances, and by the kind of plants intended to be grown, but a pit with the wall two feet high at the back and one in front, and about four and a-half feet from front to back, will afford space for a quantity of beautiful plants. The length may be quite a matter of taste or convenience; it may be that of one light only, or two, three, four, or more, at the pleasure of the proprietor. Each light should be three feet or three feet six inches in width.

Frames are structures of a character similar to pits, but the back, front, and sides are of wood. They can easily be removed from one place to another.

These pits or frames may have a pipe for hot water running round them, and in that case any greenhouse plant may be grown in them that is sufficiently dwarf and compact in habit; or they can be used without the heating appliances, and then are what are known as cold pits; such as these can be used in winter for plants of a tolerably hardy constitution, and we have seen very handsome examples of *Erica*, *Epacris*, *Acacia*, *Azalea*, *Eriostemon*, and many such-like things, grown by plant lovers possessing no other accommodation than a pit of this character. When these or similar plants are grown in such a structure, they must be well covered with Russian mats and straw mats during severe weather, and should the frost continue for several

weeks, they must not be uncovered until it is gone; even then the uncovering must be done gradually, and air must be admitted very sparingly at first. Pits, however, that are heated, will not require to be so closely covered, and the plants can therefore enjoy more light in winter, because there is then no danger that the inmates will be frozen.

Span-roofed pits or frames are also very useful, and can be made to accommodate a choice and very interesting collection of plants. In this case the middle wall is dispensed with, the ends only are built up to the required height, and then a stout beam is carried from end to end, to which the lights must be fastened with hinges.

In the summer, shading must be attended to as well as in the greenhouse or stove. The tiffany, or any other material used for that purpose, should be attached to rollers the width of the lights; this may be extended, if it should be desirable, over the plants when the lights are off, and thus they will receive a more abundant supply of fresh air.

SOILS AND POTTING.

THE soils best adapted for the growth of each genus, are mentioned under their respective heads, and need not be repeated here. The different kinds of soils, and the method of collecting and stacking them, have been explained in the division of this work devoted to Stove Plants. The remarks there offered will apply with equal force in the case of Greenhouse Plants, and may be equally consulted by those who grow such plants only.

In repotting greenhouse plants, more care is necessary

than in the case of those grown in the stove, because very few of them can bear the application of extra heat, to stimulate renewed root-action, or compensate them for any check they may receive from the operation. The operator must consequently perform his work with greater care and judgment. The stand recommended at page 16 will be of the greatest service in repotting the plants. When they are placed in the fresh pots, the new soil should be made very firm, so as to encourage the fine thread-like roots to penetrate it. This is generally done by ramming it down with a blunted stick, called a "potting-stick;" but if such an implement is used for the purpose, great care must be exercised, for in unskilful or careless hands it may so lacerate the roots as to cause the death of the plant.

In the operation of potting, three things have to be studied—viz., to place the plant in the centre of the pot, to have it exactly erect, and to set it at a proper distance below the level of the pot-rim, so that in watering a sufficient quantity can be given to moisten the whole mass, while at the same time the stem is not buried. Death is certain to be the result, if hard-wooded plants have their stems deeply buried in the soil. Before the plant is turned out of its old pot to be repotted, it must be prepared for the change it is to undergo. No plants should be repotted immediately after being watered, neither should they be repotted when dry—death is almost sure to follow in either case, though from directly opposite causes. The proper condition for a plant to be in which is about to be shifted, is that happy intermediate state, when the ball of earth is neither wet nor dry; and always bear in mind to have the pots perfectly clean and dry before potting. This is one of the most essential points in plant culture; and after a plant is fresh potted, be careful to water the soil with a fine rose pot.

In repotting hard-wooded plants, especial care must be paid to drainage, and in this matter it is always best to err on the side of extra quantity in the use of sand. A general opinion exists that such plants as the *Erica*, *Boronia*, *Leschenaultia*, *Eriostemon*, &c., do not require much water; and they are consequently treated to a small quantity only at each watering. This notion, however, is not well founded, and we cannot too strongly impress upon the minds of amateur plant-growers the necessity of giving sufficient water at each application to thoroughly wet the soil, afterwards withholding that element until the "ball" of earth again shows signs of dryness—a condition which can only be properly appreciated by practice.

During the summer months most greenhouse plants are benefited by being placed in the open air, where many of them will make their growth, and set their flower buds; but such plants as *Azaleas* and *Camellias* must not be stood out until they have done growing, after which full exposure will be very beneficial to them, tending to thoroughly ripen the wood and to set the buds. Let it be perfectly understood by our readers that we do not consider this removal to the open air indispensable to their well being.

Damp and Mildew are the great enemies of greenhouse plants, especially during the winter season. The former may be prevented by the occasional application of fire heat, to dry up the superfluous moisture, only at the same time an abundance of air must be admitted to prevent the plants from being affected by the increase of temperature. Mildew is a desperate enemy if allowed to gain a footing amongst specimen plants. It is a diminutive whitish fungus, which grows with great rapidity upon the stems and leaves, causing them to decay and fall off very quickly, to the great disturbance of the health of the plant, and the entire destruction

of its beauty. The best preventive that we know of, is flowers of sulphur dusted carefully over the parts affected, at the earliest moment that the fungus is observed; this may be done either with the fingers, or from a small dredger or box with a perforated top. The best means to prevent the occurrence of mildew, is to keep the leaf-action and root-action properly balanced, by avoiding extremes of heat and moisture on either side.

WATERING AND WATER.

THE best time of the day in winter to water greenhouse plants, during the summer season, is the evening; but in the autumn and winter months, midday is preferable. As a general rule plant-growers give themselves very little trouble about the quality or temperature of the water applied to their plants. The result of this want of thought is, that in many instances the temperature of the water may be several degrees lower than that of the house, a condition which is most injurious to the plants, affecting their well-being to a much greater extent than most persons imagine. To obviate this, the water tanks should have a branch pipe passed from the heating apparatus through or beneath them, so that the water may always be kept as warm as the atmosphere in which the plants are growing; if it should be even a few degrees warmer so much the better. When, however, a pipe is thus passed through the tank, it should be provided with a valve, so that it may be turned off when not required.

The best water it is possible to use for plants in general,

and for hard-wooded greenhouse plants in particular, is soft or rain water; and ample convenience should be provided to store it for use during summer, when long drought may be expected. Water obtained from springs, usually called hard water by gardeners, is very injurious to plants, on account of its containing an excess of the salts of magnesia or of lime, the prejudicial effects of which will soon become apparent, if applied to *Ericas* and many other hard-wooded plants; and always be careful in watering plants not to allow the water to fall on too heavily, as it will disturb the roots, and often cause the plant to get into an unhealthy state.

A SELECTION OF

GREENHOUSE FLOWERING PLANTS.

THE following species are those we consider to be the best and most worthy of cultivation. They have been selected with great care, with a plain description of each plant, and will be found the most useful and beautiful objects for the decoration of the conservatory, greenhouse, and for exhibition purposes. The amateur will be able to make a selection to suit his requirements, either for cutting for bouquets, or for growing as specimen plants for the decoration of his dinner-table and halls.

ABUTILON.

This is a most useful class of plants for conservatory decoration, and if planted out they produce a good succession of flowers, which are useful for cutting; they are also admirably adapted for planting against a pillar or wall. They are of easy culture, requiring turfy loam and peat, with some coarse river sand, and a good supply of water in their growing season.

A. Duc de Malakoff.—A neat-growing variety, of free growth, much larger than *A. striatum*, producing immense pendulous flowers, globular in shape, bright orange, striped. The best of its class.

A. insigne.—Where space can be given, this will form a very ornamental plant. The leaves are large and cordate, bright dark green. Flowers bell-shaped, pendulous, the ground colour white, but so profusely veined is it with deep rich crimson, that little white is seen. Native of New Grenada.

A. striatum.—One of the oldest, but most distinct varieties, having large balloon-shaped flowers, bright orange, mottled and flaked with crimson; habit of growth medium, well clothed with light green foliage, and a most abundant bloomer.

A. vexillarium.—A very attractive free-flowering plant, with slender branches, clothed with dark green cordate-lanceolate leaves, about three inches long. The flowers are numerous, produced singly from the axils of the leaves, two inches long, pendulous, calyx bright red, corolla light yellow; it flowers from the end of March to July, and will form a valuable exhibition plant. From South America.

A. vexillarium marmoratum.—This is a very handsome form of the preceding species, having beautifully mottled foliage; the leaves are similar in size and shape to the above, but they are curiously marbled with various shades of green and rich yellow.

Acacia.

The Australian species of this genus are both numerous and handsome, producing their flowers of various shades of yellow from January to May, and thus rendering the greenhouse or conservatory gay and attractive during several dull

months. They are easily grown into good flowering plants, and should be potted in a mixture of peat and loam, in equal parts, with a good quantity of sand. When flowering is past they may be placed in the open air, which will greatly benefit them. It is much to be regretted that so few species are to be found in our gardens, as their hardiness renders them most desirable plants, either for the conservatory, the decoration of the sitting-room, or as ornaments for the window of the cottager. The tropical species we have entirely omitted, as they require to be grown to a large size before they bloom. Some of the species are well adapted for training upon pillars, or over the back walls of the greenhouse, when that structure is not a span-roofed one, and in such positions make beautiful objects.

A. argyrophylla.—A handsome shrub, growing to a height of several feet, and furnished with obliquely obovate or oblong silvery silky phyllodes, and axillary stalked globular heads of yellow flowers. Native of South Australia.

A. armata.—This species grows from six to eight or more feet in height. The so-called leaves (phyllodia) are obliquely ovate, entire, and of a rich dark green colour. The flower heads are solitary in the axils, and are like little stalked balls of rich golden yellow. It is a native of Australia, extending from New South Wales to West Australia, and blooms in great profusion from April to June.

A. cochlearis.—A rigid-growing glabrous species, producing its globular heads of bright yellow fragrant flowers, in pairs, from the axils of the leaves or phyllodes, in January; these latter are linear-lanceolate, deep green, and terminate in a sharp point. Native of Western Australia.

A. dealbata.—The leaves of this species are bipinnate, the pinnæ bearing many pairs of pubescent leaflets, deep

green on the upper side, white beneath. It is very free-blooming, the plants producing beautiful deep lemon-coloured flower heads in axillary racemes, forming panicles at the ends of the branches, and contrasting finely with the dark-coloured foliage. Native of New Holland, where it makes a large tree. It is the Silver Wattle of the colonists.

A. diffusa.—A diffuse-habited shrub, with linear-pungent phyllodes, and bright yellow flowers, especially valuable for being produced in mid-winter. Native of Victoria and Tasmania.

A. Drummondii.—One of the most handsome species of this very extensive genus, forming a dwarfish shrub, with pinnate leaves consisting of two pairs of pinnæ, having deep green oblong-linear leaflets. The flowers are of a pale lemon colour, and borne very freely, in cylindrical spikes. It forms a handsome bush, and blooms from April to June. Native of Swan River.

A. grandis.—This plant is in habit and appearance much like *A. pulchella*, but it is larger, and the bright yellow balls of flower are also larger, and more freely produced. Native of the Swan River Colony.

A. hispidissima.—A very desirable and showy species for spring flowering. It is a branching shrub, having the branches clothed with spreading hairs. The leaves are sessile, or nearly so, one pinnæ, bearing about seven pair of oblong-obtuse, dark green leaflets. The flowers, which grow in globular heads, are produced in great profusion, generally in pairs, of a deep rich yellow. Native of Swan River, Australia.

A. linearis.—An erect shrub, the narrow linear phyllodes of which are very long and entire. The spikes of yellow flowers are produced from the axils, and are often branched. Native of New South Wales.

A. longifolia.—A fine erect-growing shrub, with the phyllodes lanceolate, tapering at both ends, and of a dark green colour. The flowers are in loose spikes, light yellow colour; they are produced in pairs from the axils. Native of various parts of Australia.

A. lophantha.—A fine, strong-growing plant, very useful for window decoration. The leaves are bipinnate, the leaflets linear-obtuse, and dark green. The cylindrical spikes of yellow flowers are produced in pairs from the axils. Native of Western Australia.

A. oleæfolia.—This is a glabrous shrub, with oblong-falcate, almost ovate, coriaceous phyllodes, somewhat in shape like the leaves of the olive, whence it has derived its name. The flower heads are yellow, collected into racemes, which are longer than the phyllodes. Native of New South Wales.

A. Oxycedrus.—This fine species is of rigid habit, and attains a height of ten or twelve feet. It is to be found in some collections under the name of *A. taxifolia.* The phyllodes are deep bright green, irregularly whorled, somewhat ovate-lanceolate in shape, but variable. The flowers grow in dense spikes, and are bright yellow, produced in winter. Native of the mountains of South Australia and New South Wales.

A. pubescens.—In this species the leaves are bipinnate, and the leaflets linear and smooth. The small heads of bright yellow flowers are disposed in racemes, which are collected into panicles at the ends of the branches. Native of the East Coast of Australia.

A. Riceana.—This is a particularly handsome and distinct species. It grows to a height of twenty feet or upwards, the branches hanging gracefully like a weeping willow; though it will also make a handsome plant in a small pot. The

phyllodes are linear, dark green, and are scattered or whorled. The flowers are produced in long spikes, and are pale yellow in colour. It is the *A. setigera* of some collections. Native of Tasmania.

A. verticillata.—A spreading shrub of prickly aspect, somewhat resembling *A. Riceana*, yet very distinct. It has the phyllodes of a linear-subulate form, and collected in whorls on the branches, while the pale yellow flowers are produced in dense cylindrical axillary spikes. It is a native of Tasmania and Victoria.

A. vestita.—This beautiful species has the phyllodes obliquely ovate-elliptic, and more or less falcate, undulate, and softly villous. The globular heads of flowers are produced in racemes, which are collected into leafy panicles, and are very showy. Native of New South Wales.

A. viscidula.—A pubescent viscid shrub, having the phyllodes entire, dark green, linear-oblong, and hooked at the point. The flowers, which are golden yellow, are produced abundantly in globular or ovoid heads, in the months of March and April. Native of New South Wales.

Acrophyllum.

A. venosum.—This is the only species of a genus belonging to the order *Cunoniaceæ*, which is by many modern botanists reduced to a tribe of the *Saxifragaceæ*, and is not remarkable for comprising plants of any great degree of merit in a horticultural point of view. The present plant indeed cannot lay claim to any striking beauty in its individual flowers, but in the mass they are very handsome. The best time for repotting is about the end of February. The soil should be good fibrous peat, with a good quantity of sharp sand, and drainage should always be ample. It must be placed in an

airy position, and great care must be taken not to allow the roots to become dry; while it must not be kept warm by means of artificial heat, and a daily sprinkling with water in spring and summer will be conducive to health, and will assist in keeping off the thrips (*Thrips adonidum*), which are especially injurious to this plant. It is a compact-growing shrub, producing its coppery green serrated leaves sometimes in pairs, but more frequently in whorls; and the dense terminal Spiræa-like flower spikes are of a pinkish white colour. It blooms during May and June, and is highly ornamental. It is indeed one of our very best greenhouse plants for exhibition purposes. Native of New Holland.

ADENANDRA.

A genus of handsome dwarf compact-growing Rutaceous shrubs, all natives of the Cape of Good Hope. The soil best adapted for them is good sandy peat, mixed with a small quantity of turfy loam. They are plants of a very ornamental character when in flower, and are very serviceable for exhibition purposes.

A. fragrans.—The leaves of this plant are small, spreading, somewhat oblong in shape, dark green in colour, full of glandular dots. The flowers are rose-coloured, and sweet scented. It blooms during May and June.

A. speciosa.—A handsome species, with dark green, oblong, revolute leaves, slightly fringed at the margins. The large pink-coloured flowers are produced in terminal umbels, during the months of April, May, and June.

A. uniflora.—In this species the leaves are dark green, oblong-lanceolate, with the edges slightly turned back. The flowers are terminal and solitary, of medium size, pink outside and white within. It blooms from April to July.

Agapanthus.

The plants comprised in this genus of *Liliaceæ* are too frequently neglected by cultivators, but they are of so ornamental a character, that did they require it, they would certainly deserve any amount of care; the contrary, however, is the case, as a very slight protection is all that is necessary during the winter months, and in summer they grow freely with very little care. These plants make beautiful specimens, either grown in large pots, in vases, or in tubs, for out-door decoration in the summer-time; and they are also highly ornamental in a smaller state for the decoration of the conservatory. The species of *Agapanthus* are stout rooting plants, and should be potted in rich loam, mixed with some well-decomposed manure and river sand. The pots should be well drained, as they delight in an abundance of water during the growing season; but in winter very little indeed will be necessary, as they are partially deciduous, and may be kept under the greenhouse stage, or in any rather dry cool place, protected from frost. These plants associate well with water, and have a beautiful effect when placed round a fountain; or they may even be grown as sub-aquatics, where appropriate situations occur for adopting this mode of treatment.

A. umbellatus.—This fine old plant, well known in gardens under the name of the Blue African Lily, is one of the most ornamental plants that can be grown for late summer and autumn blooming. The leaves are long and strap-shaped, dark green. The flowers are rich deep blue, borne in many-flowered umbels, and continue a long time in perfection. Native of the Cape of Good Hope.

A. umbellatus albiflorus.—This variety is smaller than the

preceding in all points, and is quite deciduous, and not partially so, as is the type form of the species. Its flowers are borne in large umbels, and are pure white. When the leaves begin to show signs of decay, the plant should have less water, and be allowed to rest until the spring. Native of the Cape of Good Hope.

A. umbellatus maximus.—A very fine and robust form of the species, larger than the type in all respects. The flowers are disposed in fine crowded umbels, and are of a bright azure blue, streaked with a darker shade of the same colour. From the Cape of Good Hope.

Anopteris.

A. glandulosus.—A most beautiful evergreen shrub, with large dark shining green leaves; it is of free-branching habit, and producing long panicles of pure white salver-shaped flowers. This will become one of the best exhibition plants when better known. It requires liberal pot room, and plenty of water when growing. Soil should consist of fibrous loam and peat in equal parts, with a sprinkling of silver sand.

Aphelexis.

A very handsome genus of Composite plants, familiarly known as everlastings, on account of the flowers retaining their beauty many months after being cut. The *Aphelexis* are well deserving general cultivation by all plant-growers, but are especially valuable to those who grow for exhibition, as for that purpose they are invaluable, their bright colours rendering them very conspicuous, and their membranous flowers lasting a long time in perfection. The soil best adapted for them is good fibrous peat and leaf mould, with a

liberal addition of silver sand, and a few pieces of charcoal mixed through it.

A. Barnesii.—The very finest light variety, rather stout in its growth, and not quite so free branching as the others; produces large bright rosy pink flowers on stout flower stalks, about two inches across.

A. humilis grandiflora.—An intermediate-growing kind, free-branching habit, flowers rosy purple, produced in great abundance.

A. macrantha purpurea.—This is also known as *A. grandiflora* and *A. spectabilis.* A free-growing kind, easily distinguished from the others by having a more light smooth shining foliage, and a profusion of dark purple flowers. The finest exhibition variety.

A. macrantha rosea.—A very close, compact, free-branching variety, flower delicate rose. A distinct and desirable kind.

Azalea.

This superb genus of highly-ornamental plants is deservedly a universal favourite, the varieties being alike useful for the decoration of the dinner-table, the sitting-room, the hall, the greenhouse, or even (in the southern counties of England) the open border. For exhibition purposes they are unequalled; indeed, at all spring exhibitions of plants they form the leading feature. They are of easy culture, and may be readily forced into bloom by being placed in a warm house; they may consequently be had for home decoration from Christmas to May, if a tolerable collection of them is kept up. They are such general favourites that many hundred varieties of them have been introduced to cultivation, and many persons devote themselves entirely to the raising of new forms, by hybridising and cross-breeding.

We have here attempted from among this profusion to select a few of the best, though no one who desires to have a good collection should think of confining himself to the sorts here named, for tastes differ, and some of the varieties we have omitted may have particular tints which may please certain cultivators, while, again, new forms are constantly appearing.

Azaleas are among the most useful of all plants for cutting for bouquets and dinner decoration. The plants will indeed stand more cutting than most hard-wooded subjects; and after the bloom is off, if they are placed in heat and kept well syringed, they will make a fine new growth, and become again completely furnished.

After blooming, the plants, except in the case of very large specimens, should be repotted. The large plants will probably not require potting for several years, and must have some weak liquid manure applied to them occasionally. They should be placed in a temperature ranging from 50° to 60°, giving plenty of air when the weather is favourable, and using the syringe freely morning and evening. When the growth is completed the temperature must be gradually lowered, until they can be removed outside to ripen the wood and swell up the flower buds. In the autumn they must be removed into the greenhouse before frost sets in. The soil best adapted for them is three parts good fibrous peat, one part light loam, one part leaf mould, and one part sand; and it is very important that the drainage should be maintained in good condition.

The propagation of *Azaleas* is effected by cuttings and by grafting, both operations being very easy; in fact, the scions of these plants are amongst the easiest and quickest to form a union with the stock of anything that I know.

A. amœna. — This very handsome and free-flowering *Azalea* is one of the most beautiful things for early flowering which we possess. The foliage is very small, and the habit of the plant is dense and shrubby. The flowers also are small, but produced in the greatest profusion, of a rich rosy crimson colour, with a duplicate corolla (*i. e.*, having what are called hose-in-hose flowers), and consequently stand longer after cutting, making it useful for bouquets. It is one of Mr. Fortune's introductions from China, and was met with by him in a nursery at Shanghae.

A. Antoinette Thelemann.—A handsome kind, with very large double flowers, of a rosy scarlet colour, stained with violet.

A. Beauté de L'Europe.—A very distinct and handsome variety; form and substance of petals good, the colour bright pink, striped with carmine.

A. Bijou de Paris.—A profuse bloomer, with fine large well-formed flowers, which are pure white, streaked with rose and stained with light yellow.

A. Bride of Abydos. — A vigorous grower, and free bloomer; flowers white, marked with flakes of light rosy pink.

A. Charmer.—This variety is of a beautiful bright rosy amaranth, spotted lightly in the upper petals with a deeper shade of the same colour; flowers large, of good shape and substance, and a free bloomer.

A. Comet.—A very effective kind, of good habit; the flowers are bright salmon scarlet, with the upper petals shaded with violet.

A. Criterion.—This well-known variety is of good dwarf bushy habit, and has beautiful light salmon pink flowers, edged with white.

A. Dominique Vervaene.—A very fine double variety, with large bright orange red flowers; it is very distinct and effective.

A. Dr. Livingstone.—A large flower, of excellent substance and form, the colour a deep purplish rose.

A. Duc de Brabant.—A fine flower, of good form and texture, rose colour, profusely spotted towards the base with rich salmon pink.

A. Duchesse Adelaide de Nassau.—This is a fine exhibition variety; flowers large, bright scarlet, shaded on the upper segments with violet rose.

A. Duke of Cambridge.—Flowers rosy crimson, shaded and marked with purple and maroon.

A. elegantissima.—A dwarf variety, with flowers of good form and substance, white, striped with rosy carmine; a free bloomer.

A. Empress Eugénie.—Flowers large, and of excellent form and substance; colour bright shining rose, profusely spotted on the upper petals with reddish purple. A very desirable kind.

A. Etoile de Gand.—This fine old variety is of splendid form and substance; the flowers are large, of a rosy salmon colour, broadly bordered with white, and spotted with crimson on the upper segments.

A. Eveline.—A variety of superb form and colour, the centre orange, with a broad margin of white, and streaked with crimson.

A. Fascination.—This is a semi-double variety, with flowers of good substance, clear flesh colour, shaded with light pink; a charming and very effective kind.

A. Flag of Truce.—Of free-growing habit; the flowers are large, double, pure white, and of good substance. It is certainly one of the best in cultivation.

A. François Devos.—A very fine semi-double variety, of good vigorous growth, and a free bloomer; the outer petals are round, of great substance, and are filled in the centre with petaloid filaments; the colour is deep rich red, spotted on the upper petals with black.

A. Gem.—This is one of the very best late-blooming varieties; it is of dense habit, and the flowers are small, but of good form and substance, of a rich deep salmon colour, slightly spotted.

A. Gledstanesii formosa.—A variety of fine form and substance; flowers pure white, striped with carmine.

A. Glory of Sunninghill.—A distinct and beautiful form, of fine vigorous habit; the flowers semi-double, of a bright pink colour.

A. Grande Duchesse de Bade.—This variety, which is of excellent habit, and very effective, has the flowers of good form, sometimes inclining to become double, the petals stout and waxy, and of a rich bright orange scarlet.

A. Her Majesty.—A beautiful variety, with finely shaped flowers, of excellent form; the colour is very distinct, lilac tinted flesh, bordered with white, spotted with crimson on the upper segments, and flaked with rich rose purple,

A. Hero.—This is a compact free-branching variety, with flowers of good shape and substance, of a delicate salmon pink colour, the upper segments profusely spotted with a darker shade.

A. Holdfordiana.—Of vigorous habit, but a very profuse bloomer; the flowers rich rosy purple.

A. Hortense Vervaene.—A variety producing large, stout, and well-formed flowers, which are rosy carmine, bordered with white.

A. Juliana.—An abundant bloomer; flowers of fine form, rich crimson, profusely spotted on the upper petals.

A. King of Spots.—Of free-flowering habit, good size, and fine form; colour orange scarlet and rose, beautifully spotted with brown.

A. La Superbe.—Flowers of a deep orange red, and richly spotted with dark spots; very handsome and effective.

A. La Surprise.—A variety of superior merit, and an abundant bloomer; the flowers are of good size, rich salmon rose colour, the three upper segments being beautifully dotted.

A. La Victorie.—A distinct and handsome kind, with fine round petals of good substance; colour rich cerise, the upper segments spotted with black.

A. Leopold the First.—A very rich flower, of good substance, colour delicate rose, the upper petals spotted with red.

A. Lizzie.—A variety of free-blooming habit; the flowers large, stout, and of fine form, white, beautifully flaked and striped with rosy carmine.

A. Lord Derby.—Of good form and substance, in the way of the variety called *Model*, but superior; colour rich pure rose, spotted with crimson on the upper segments.

A. Louise von Baden.—A very superior variety, if not the best of the pure whites; the flowers are of fine form and remarkable substance.

A. Madame de Cannært d'Hamale.—Flowers very large, pure satiny white and waxy, beautifully spotted with yellow on the upper segments; a superb and most desirable variety.

A. Madame Iris Lefebvre.—This is a very fine flower; the ground colour is dark orange, shaded with bright violet, upper petals blotched with chocolate, of fine substance, and very double.

A. Mademoiselle Leonie Van Houtte.—This is an extremely handsome variety and very distinct; flowers large, pure white, flaked with rose and spotted with sulphur yellow.

A. Madame Marie Van Houtte.—A beautiful semi-double variety, having very fine large pure white flowers, which are flaked and blotched with clear rosy salmon.

A. Madame Dominique Vervaene.—Flowers of excellent form, delicate rose, streaked with lilac and red, and bordered with white, the upper segments being profusely spotted with reddish purple.

A. Madame Leon Maenhaut.—This is a novel and beautiful kind, with bright rose and amaranth crimson flowers, spotted with black; a very effective variety.

A. Madame Marie Vervaene.—A handsome variety, with large, beautifully fringed, pure white flowers, and rosy carmine stripes, of excellent form.

A. Madame Miellez.—A compact-growing kind, with flowers of good form, ground colour white, prettily striped with violet.

A. Madame van der Cruyssen.—This variety is an abundant flowerer, with healthy foliage, and a good habit; the flowers are rosy amaranth, handsomely spotted on the upper segments, but, like many continental sorts, having a tendency to become semi-double.

A. Magnet.—The flowers of this variety measure upwards of three inches in diameter, and are of good substance, and well formed, of a deep rosy salmon pink, the upper segments spotted with rosy purple. It is of vigorous but dwarf habit, and is a late bloomer, in the way of, but even better than, the kind called *Sir C. Napier.*

A. Mars.—A very bright and attractive variety, and an abundant bloomer; the flowers are large and of good substance, bright orange red, spotted in the upper petals with a deeper colour.

A. Maximilian the First.—A fine double-flowered variety, of a light rose colour, profusely spotted with carmine, streaked with red, and margined with white.

A. Ne Plus Ultra.—A most abundant bloomer, and of

good robust and free-branching habit; the flowers are large, of good substance, and with a glossy surface, white, beautifully marbled with salmon.

A. Nonpareil.—Flowers with light orange centre, broadly margined with white, the upper segments dotted with chocolate and pale orange; of superior form, and fine habit.

A. President A. Verschaffelt.—Of superb form and habit; the flowers bright satiny orange, the upper petals being beautifully shaded with purple, and profusely spotted with black; a most desirable variety.

A. President Claëys.—Flowers orange salmon, finely spotted, and having a broad white margin.

A. President Human.—Flowers very large, and of splendid form, the ground colour pure bright rose, beautifully shaded with salmon.

A. Princess Alexandra.—This is an improved and beautiful form of *A. elegantissima*, with flowers three and a-half inches in diameter, round, smooth, and of great substance, the ground colour white, slightly striped with deep crimson. It is a profuse bloomer, possessing the qualification of flowering very early, with little or no forcing.

A. Princess Helena.—Flowers deep rosy pink, the upper petals spotted with lake, and very transparent; it is of good free habit, and very distinct.

A. Princess Louise.—A superb large flower, excellent form; the colour is pure white, petals of great substance and very double.

A. punctulata omnicolor.—A showy free-flowering kind, and very attractive; flowers white, singularly variegated with stripes and blotches of orange scarlet.

A. punctulata variegata.—Similar to the preceding in the peculiar variegation of the flowers, but the colours are different, the ground being rosy scarlet, striped and mottled with orange scarlet and white.

A. Queen of Beauties.—Flowers large, of fine form and substance, salmon pink, flaked with carmine, and margined with white, the upper segments richly spotted with crimson.

A. Queen of Roses.—Flowers large and stout, rosy pink, the upper segments faintly dotted pale crimson.

A. Queen Victoria.—This is a most abundant bloomer; the flowers are large, pure white, striped with purple.

A. Reine des Doubles.—Flowers large and very double; colour rich clear rose.

A. Reine des Panachées.—A free grower, and producing an abundance of its white flowers, which are streaked and splashed with rose.

A. Reine des Pays Bas.—This is a free-flowering variety of great beauty; the habit is good, as likewise is the form and substance of the flower; in colour it is pinkish violet, edged with white, and spotted with rich crimson.

A. Reine Marie Henriette.—A distinct and charming variety; the flowers are large, ground colour soft salmon, edged with pure white, whilst the upper petal is spotted with bold spots of deep carmine.

A. Roi des Beautés.—A fine double-flowering variety; the colour is a delicate soft rose, with a broad margin of clear white.

A. rosæflora plena.—A variety producing in abundance large very double flowers, which are of a deep rich rose colour.

A. Sir Charles Napier.—Of good habit, and a free bloomer, producing large salmon pink flowers, of good form and substance; a very useful variety.

A. Sir Robert Napier.—A variety of good habit, with small neat foliage; the flowers are of medium size, and of good form and substance, produced in great abundance, the colour a very deep shade of crimson, the upper petals slightly spotted.

A. Snow White.—The flowers of this variety are very large, and perfect in form; the petals are of rich velvety substance, pure white, profusely streaked with rosy pink.

A. Souvenir de Prince Albert.—A handsome double variety, with rosy peach-coloured flowers, edged with pure white; a very effective kind.

A. Souvenir de van Peene.—A fine-shaped variety, of a deep rose colour, shading to pink, beautifully spotted on the upper segments with reddish purple.

A. Stella.—This is a vigorous-growing and very showy variety; the flowers of rich orange scarlet, having the upper lobes tinged with deep violet.

A. Symmetry.—Flowers large, of good substance and excellent form; colour salmon pink, profusely spotted with crimson on the upper segments.

A. The Bride.—A handsome variety, with large pure white flowers, of fine shape, and good substance.

A. Theodorus. — Of free growth, and an abundant bloomer; flowers large, bright vermilion, shading to rich purple.

A. variegata superba.—An improvement upon the old *A. variegata;* it is of good habit, with large flowers of excellent form, salmon pink, margined with white. This is especially valuable as a very late bloomer.

A. Vivid.—This, as its name implies, is a beautiful bright variety; the flowers are very freely produced, of beautiful shape and good substance, in the same way as *A. Stella*, but very much brighter.

BIGNONIA.

This is a noble family of plants; nearly all are climbers, and present a truly gorgeous appearance when in flower.

They are all well adapted for training up pillars and rafters. Many grand species have yet to be introduced to our gardens. They require a compost of fibrous loam and peat, two parts of the former to one of the latter, with the addition of a little silver sand, and luxuriate in a good temperature; the wood should be well ripened by exposure to the sun, as it is mostly from this the flowering growths start. On account of their requiring to be large before they flower freely, pot culture is not applicable to many of them, but if planted at the base of a pillar or rafter, the effect they produce is gorgeous. They are increased by cuttings of the young shoots, inserted in sand and placed in gentle heat, and also by layers, as well as by pieces of the roots, although this last method is more calculated to produce quantity, than good plants rapidly.

B. Chamberlaynii.—A magnificent climber, producing its long panicles of bloom in great profusion, which continue from May until October. The leaves are ovate-acuminate, smooth, and shining above, tendrils very strong. The flowers are large, trumpet-shaped, and bright yellow in colour. It is a most desirable species. Native of Brazil.

B. grandiflora.—Although this variety is nearly hardy it is well deserving a place in the cool greenhouse. It is either adapted for growing as a shrub, by occasionally pruning or stopping, or, being sub-scandent in habit, it will be found invaluable, if required, for pillars, trellis-work, or covering walls; in such positions producing an abundance of magnificent clusters of large orange and scarlet trumpet campanulate flowers.

B. speciosa.—A free-growing and most distinct variety, producing clusters of large lavender flowers from the axils of the leaves; the foliage light green. This variety is suitable for a cool greenhouse temperature.

B. venusta.—This is one of the most gorgeous climbers we know, and where space can be afforded it should by all means find a place; this variety requires the temperature of a warm greenhouse. The leaflets are oblong-ovate and acuminate; the spikes produce many flowers, which are large, trumpet-shaped, and rich crimson in colour. It lasts for several months in perfection, covering the pillar or rafter that it may be trained to with a complete sheet of colour. Native of Brazil.

Blandfordia.

This genus of plants is nearly allied to *Hemerocallis*, and consists of several species, all natives of Australia. They have been long out of fashion, so to speak; but plant-lovers and plant-growers are beginning to show their good taste, by their appreciation of these and many other plants of great intrinsic merit, which have been cast away, and become lost to us, because they no longer possessed the charm of novelty. Amongst the foremost in this group of reviving interest is *Blandfordia.* The species will amply repay the little care which is required to be bestowed upon them. They should be grown in very sandy peat and loam, being potted in autumn, and placed in a low temperature. If the soil is in good order when they are potted, little or no water will be required until they begin to grow, when they should have an increase both of heat and water. After they have done flowering, and have completed their growth, they may be stored away under the stage, or on shelves, as recommended for *Amaryllis.*

Increase may be effected by seeds, and also by division of the old plants.

B. aurea.—A very fine and valuable addition to our summer-flowering greenhouse plants; the leaves narrow, linear, and

dark green; the scape usually attains a height of about two feet, bearing upon its apex an umbel of large, drooping, rich golden yellow bell-shaped flowers. It is a native of Australia.

B. Cunninghamii.—This is a beautiful ornamental greenhouse plant, a native of the Blue Mountains in New South Wales, and by far the handsomest species known. The leaves are perfectly smooth, about two feet in length, linear-ensiform in shape, slightly keeled at the back, and about half-an-inch broad at the base, bright green on the upper surface, and paler below. The flower scape is about three feet high, supporting a terminal cluster of from sixteen to twenty pendulous flowers, each about two inches long and somewhat bell-shaped, in colour a bright coppery red, the upper expanded part being a rich golden yellow. It is a most desirable plant, which should be added to every collection of greenhouse plants.

B. flammea.—A beautiful species, resembling the others in habit. The leaves are somewhat stiff and narrow. The flowers are borne upon a graceful stem, and are between three and four inches long, bright orange scarlet, margined with yellow. It blooms during the end of summer and beginning of autumn. Native of New Holland.

B. nobilis.—This fine plant has existed in our gardens since the commencement of the present century, but is far too little known. It is one of the most effective greenhouse plants that can be grown. The flowers are pendulous, and produced in large terminal clusters; colour, rich orange, the margins shading off to bright yellow, and they are in full beauty during June and July. Native of Australia.

Boronia.

A very pretty genus of plants, some of which should be in every collection. They belong to the *Rutaceæ*, a very in-

teresting and extensive order, but which contains a rather heterogeneous assemblage of plants. The present genus consists of greenhouse shrubs, all natives of Australia, and grow in their native country into moderate-sized bushes. They are easily grown into good specimens, and are very ornamental for home decoration, as well as making good objects on an exhibition table. The soil best suited for them is good fibrous sandy peat, and great care should be taken that the drainage is in perfect order, for they cannot suffer water to stand about their roots with impunity. Boronias are increased by cuttings of half-ripened wood; these should be inserted in a properly prepared cutting-pot and covered with a bell-glass, taking care that they do not rot with damp. The following are a few of the best species:—

B. crenulata.—This pretty species has somewhat ovate, dark green leaves, crenulated at the edges, and ending in a little hard sharp point. The flowers are produced from the axils of the leaves near the points of the growths, and are of a pretty clear red. It grows from two to three feet high, and makes a handsome specimen. Native of New Holland, about King George's Sound.

B. Drummondii.—A species of somewhat slender, but compact habit of growth. The leaves are pinnatifid, and of a light green colour. It is an abundant bloomer, producing its pretty rosy pink flowers during spring and early summer. Native of New Holland.

B. Drummondii alba.—A garden variety, of slender habit, having light green pinnatifid leaves, as in the species. The flowers are freely produced, but differ from the preceding in being pure white, affording an agreeable contrast.

B. pinnata.—This species belongs to the pinnate section of this genus. The leaves consist usually of three or four

pairs of pinnæ, with a terminal pinna, and the leaflets are linear and acute. The flowers are fragrant, pink, produced in April and May. It grows from one to three feet high, and is one of the best for exhibition. Native of Port Jackson, New Holland.

B. serrulata.—This very handsome plant has smooth, trapeziform, bright green leaves, which are serrulated at the edges, and full of glandular dots. The flowers are rose-coloured and very sweet, produced from the axils of the leaves during May and June. It makes a very handsome specimen, growing from one to four feet or more high in its native country, which is Port Jackson, New Holland.

B. tetrandra.—A pinnate species, which is sometimes, though erroneously, named *B. microphylla;* the name it is known under is, however, not applicable to the plant, as it has eight and not four stamens. It is somewhat like a dwarf form of *B. pinnata*, bearing from three to five pairs of leaflets, with a terminal one; they are linear, obtuse, smooth, and dark green. The flowers are produced singly from the axils of the leaves, and are of a delicate pale pink colour, appearing in April and May. Native of New Holland.

Bouvardia.

This fine genus of *Rubiaceæ* contains many pretty species and varieties, which are very useful either for conservatory decoration, or for cutting for bouquet-making, most of them being, moreover, fragrant, which is an additional recommendation. They should be grown in a mixture of peat and loam, in about equal parts, with a liberal addition of sand. The plants should be kept close to the glass, to

prevent them from getting weak and straggling, and the atmosphere should be kept charged with moisture to prevent attacks of the red spider (*Acarus tellarius*). If well grown, few plants are more attractive than *Bouvardias*, their dense heads of Ixora-like flowers being very elegant and ornamental. These plants are most readily propagated by cuttings, which should be inserted in the same soil as the old plants are grown in, simply covering with a little silver sand.

B. angustifolia.—This is a dwarf, free-flowering variety of the old *B. triphylla*, with neat foliage, and trusses of brilliant scarlet flowers. It comes from Mexico.

B. Brilliant.—A garden variety, of free-flowering habit, producing a profusion of bright scarlet blooms in autumn, and contrasting well with lighter-coloured kinds.

B. carnea.—A garden variety, resembling *B. longiflora* in habit and general appearance, producing its fragrant delicate flesh-coloured flowers in great profusion.

B. delicata.—The flowers of this kind are of a rich salmon red, with white throat, the tube being pale pink on the outside.

B. flava.—A distinct species, introduced from Mexico. It produces trusses of light yellow flowers during the spring months, but does not flower very freely during the summer.

B. Hogarth.—A very fine variety, with dark green ovate leaves, and bright carmine flowers, with a somewhat paler tube.

B. hybrida.—This fine variety has larger and more acuminate leaves than the most of the others. The flowers are produced in great profusion in large heads, the colour being a bright reddish scarlet, which contrasts admirably with the dark green of the foliage.

B. Laura.—A very handsome variety, with bold trusses of delicate rose-coloured flowers. The plant is of a neat compact habit.

B. leiantha.—This species continues flowering for a long time. It is a strong grower, producing ample dark green leaves, and large trusses of bright scarlet flowers. Native of Mexico.

B. longiflora.—This plant is a native of the temperate regions of Mexico. The leaves are opposite, oblong-acute, smooth, and dark green. The flowers are terminal, about three inches long, pure white, and very fragrant. It makes a shrub some two or three feet in height.

B. longiflora flammea.—A variety of the preceding, having dark green, somewhat ovate leaves, flowers large, tube rosy pink, the lobes of the limb being salmon colour.

B. Oriana.—In appearance this resembles *B. hybrida*, but it is rather more compact in habit. It is a lovely object when grown into a good specimen, with its large trusses of rich scarlet flowers and pink tubes.

B. Rosalinda.—A variety of good habit, producing dense trusses of large rich salmon-coloured flowers; a very desirable plant.

B. Vreelandii.—This is a very fine variety of this useful family. It is a free grower and profuse bloomer; the leaves are ovate, dark green in colour, and the flowers are large and pure white, produced in dense trusses. It blooms in autumn and mid-winter. A garden variety, also known by the name of *B. Davidsonii.*

Brugmansia.

How very seldom we now see in our conservatories the fine old plants which constitute this genus! Yet they have

a noble appearance, when laden with their large pendulous trumpet-shaped flowers; and they are of very easy culture, succeeding best in a mixture of good fibrous peat and rich loam, in equal parts, to which should be added a little well-decomposed manure and some silver sand. In growing them from a young state, it is best to keep the laterals picked out, confining them to a single stem for about four or five feet, after which they should be encouraged to form heads. About the middle of March the plants will begin to show signs of starting; they should then be taken out of their pots or tubs, and have some of the old soil removed, and then be repotted into the compost already recommended. As they advance into free growth, water should be given liberally, and during the same period, as well as afterwards, the syringe must be used frequently, but lightly; this will greatly benefit them. When covered with their fine pendent white, scarlet, or orange blossoms, they are splendid objects for the conservatory. They also thrive well in the open air, in the summer season, but retain their beauties longer when sheltered from the changes of weather. When the flowering season is past, water must be gradually withheld, and the plants must be kept tolerably dry during winter. They bear pruning well, and may be trimmed according to taste any time while dormant.

B. Knightii flore pleno.—This is a truly magnificent conservatory plant, resembling *B. suaveolens* in habit and general appearance, and producing its large pendulous double white flowers in great profusion.

B. sanguinea.—This is a magnificent plant, which no conservatory should be without. The leaves are large, and sinuately lobed, with the branches slightly tomentose. The flowers are pendent, trumpet-shaped, seven or eight inches long, pubescent; the tube fleshy and orange yellow, tinged

with green at the base, while the limb is a rich orange red or scarlet. It is a highly-ornamental plant, growing from three to fourteen feet in height. Native of Peru and New Grenada.

B. suaveolens.—The leaves of this species are somewhat oblong in shape, entire, smooth, and dark green in colour. The flowers are trumpet-shaped, pendent, large, pure white, and very fragrant. It produces its blooms through the summer and autumn months, and is a very effective plant. Native of Mexico and Peru.

Camellia.

This magnificent genus of evergreen shrubby plants was first introduced to this country about the year 1739. The varieties then sent home were *C. japonica* and *C. anemoniflora*, the latter perhaps better known under the name of *Red Waratah*. Both were introduced from China, where they are great favourites with the inhabitants, the varieties being planted by them very largely in their groves and gardens, where they yield a profusion of gay flowers from October to the beginning of May. The plant has become such a universal favourite with all European horticulturists, that we have come to look upon it as a plant of our own, and not an introduced one. Very few kinds have been imported into this country; but the work of intercrossing and of raising seedlings has been so diligently and successfully carried on, that many hundreds of varieties might be enumerated.

The genus *Camellia* is nearly related to *Thea*—indeed, by some authorities the latter is merged into *Camellia*, so that one might invite one's friends to drink a cup of *Camellia*, instead of a cup of tea; it is, however, well known

that the leaves of *C. sasanqua* are used in China to mix with some of the select kinds of tea, to give them a superior flavour.

Camellias are universally admired for the rich and pleasing contrast afforded by their dark green leaves and their superb double flowers, which latter enliven our greenhouses and conservatories throughout the winter and spring months. The flowers are also extensively used for bouquets and for dressing ladies' hair, for balls and parties; indeed, the want of fragrance is perhaps the chief thing which prevents the *Camellia* from supplanting the *Rose* in universal admiration.

The soil best adapted for *Camellias* is a mixture of about equal parts good turfy loam and peat, with a liberal addition of sharp sand. We consider the best time for repotting is just when the young growths begin to start; some growers object to this operation being performed until the blooms are all past, but it has always seemed to us the most natural to give fresh nourishment to the young wood at the time it can be used with the greatest advantage, even though it be at the sacrifice of a few flowers. After potting, a little artificial heat should be given, and the plants must be liberally supplied with water, both to the roots and foliage. The growth being complete, heat must be discontinued, and water given more sparingly, while more air is permitted, in order that the plants may be hardened off, preparatory to being stood in the open air to thoroughly ripen their wood and swell up the flower buds. If very large flowers are required, each shoot should be allowed to carry but one bud, though in other cases two or more buds may be left, according to fancy. In the autumn the plants must be removed in-doors again, and care must be taken that the watering is carefully done, for the giving of either

too little or too much will cause the buds to fall off, and the whole season's labour to be lost. *Camellias* are not forced into bloom very successfully in the ordinary way. Those intended for the first blooming should be potted and grown on before the others, and should both be placed in the open air earlier, and be returned sooner to the house, than those required to flower later; these will thus naturally open their blossoms sooner, and afford a display of flowers until the main stock is ready.

In many gardens of large extent, a house is devoted entirely to the *Camellia*, and a more glorious sight can scarcely be conceived than is presented by hundreds of these splendid flowers all open together, in such a house. They are best planted out in the borders, using compost similar to that recommended for pot culture, or if any difference be made, a little more loam may be added; but here drainage must first be put in, to the depth of nine or ten inches, and this must be covered with turfs of grass to prevent the soil from mixing with it, and thus destroy the object for which it was put in. In the case of such plants it becomes impossible to remove them out of the house after the growth is made; and in order to remedy this, the top sashes, as well as those at the sides of the house, must be opened, so as to expose the plants as much as possible to the full influence of sun and air until autumn.

In many parts of England, *Camellias* grow well in the open air, and form beautiful ornaments to the pleasure-grounds; thus, in Kent, Surrey, Hampshire, Wiltshire, and Devonshire they succeed admirably, many of the varieties proving more hardy than a Laurel; and there is little doubt that if tried in many other parts of the country, equally good results would follow.

The *Camellia* is not very liable to suffer from attacks of

insects. The green and black fly attack the young growths and flower buds, but as fumigation with tobacco or tobacco paper will easily kill them, they should not be allowed to remain long enough to do any injury. The white scale sometimes makes its appearance, and this must be at once washed off with warm water and soft soap. We have selected from the many varieties of *C. japonica* the following, which are all of superior merit :—

C. Adriana.—A beautiful variety, of great size and superb form ; the petals imbricated, stout, and very smooth ; the ground colour bright carmine, shaded with cerise.

C. Archduc Etienne.—Foliage bold ; flowers large, the petals broad, imbricated, and of great substance ; the colour when opening a rosy blush, changing when fully expanded to deep rosy pink.

C. Archduchesse Augusta.—A good grower, and producing flowers of good form and substance, and of a dull crimson colour.

C. Archduchesse Marie.—A compact, free-branching, and free-flowering variety ; flowers cerise, striped with white.

C. Bealii.—An old variety, of compact habit, producing good bright crimson flowers.

C. Bealli rosea.—This form has the growth of the preceding, but the flowers in this are rich rose colour, beautifully imbricated.

C. Bella Romana.—Flowers large ; form good ; colour soft blush, flaked with crimson.

C. Bonomiana.—Foliage like that of *C. imbricata ;* flowers large, and of good substance, white, mottled with carmine.

C. Carlotta Papudoff.—This is a superb variety, of good size and substance ; the ground colour is carmine rose, beautifully blotched with white.

C. Carlotta Poloso.—Flowers of average size, and with

somewhat pointed imbricated petals; colour rosy red, striped down the centre of each petal with blush.

C. Chandler's elegans.—This is a great improvement upon the old *C. Chandleri.* The flowers are large, the petals very broad, and of a rich bright pink colour.

C. Comte de Toll.—Of good form and habit; the colour a clear salmon, veined with a darker shade of the same colour.

C. Comtessa Lavinia Maggi.—A variety of robust habit, producing flowers of good form, and very double, the petals beautifully imbricated; the colour is blush white, with bold streaks of bright rosy carmine. It somewhat resembles the variety called *C. tricolor*, but is much superior both in colour and form.

C. Comtessa Lavinia Maggi rosea.—A sport from *Comtessa Lavinia Maggi*, with flowers of a brilliant carmine rose; a superb kind.

C. Constantin Tretiakoff.—A large and beautifully formed flower; the ground colour is soft blush, shading towards the base of each petal into a rich pink.

C. Countess of Derby.—Flowers large, quite double, white distinctly flaked with rose pink; the outward petals reflexed. This is a beautiful variety, with finely formed flowers and broad, deep, shining green foliage.

C. Countess of Orkney.—Flowers large, finely cupped and imbricated, white, striped with bright rose carmine.

C. Cup of Beauty.—A variety which requires to be kept pruned into shape. It is an abundant bloomer, with flowers of average size, and of good substance, pure white, streaked with rose, cupped in its earlier stages, reflexed when fully expanded.

C. de la Reine.—Flowers of moderate size, imbricated or somewhat cupped when young, white, faintly striped with light rose colour.

C. Dionisia Poniatowski.—Habit dense and good; flowers of most beautiful outline, white, slightly shaded with pink.

C. Donkelaari.—This is an old variety, but one which must be grown in every collection. It is of good habit, the leaves somewhat small, but flowers large, and semi-double; when properly grown the petals are of a warm crimson, beautifully mottled and flaked with white.

C. Duchesse de Berri.—Habit good; leaves large; flowers large, pure white, superior in shape to the old *Double White*, the petals being more imbricated.

C. Duchesse de Nassau.—A very handsome variety; the colour is a delicate pink, the centre petals shaded with crimson cerise.

C. Duchesse d'Orleans.—Flowers imbricated, of moderate size, blush white, striped with cerise and rosy carmine.

C. Elvira Bianchini.—A beautiful variety, of good proportions; flowers large and round, the petals smooth, creamy white, streaked and barred with rose.

C. Filippo Parlatore.—Of good robust habit, and bold foliage; the petals are cupped, smooth, and even at the edges, beautifully striped with rosy carmine on a blush white ground.

C. Fra Arnoldo da Brescia.—A very pretty variety, with deep red flowers, nicely imbricated, and sometimes blotched with white; it is both a good grower and a free bloomer.

C. General Cialdini.—A superb variety of great merit; the petals are well formed, and of good substance; the colour is rich carmine, barred with red.

C. Giardino Santarella.—A very fine variety, of good robust habit, with bold foliage; the petals are very smooth and cupped; the colour blush white, striped with rosy carmine.

C. imbricata.—This variety, though an old one, is still one

of the very best; its habit of growth and constitution are both good; the flowers are of superb form, the colour crimson, occasionally blotched with white.

C. imbricata alba.—A most desirable kind, with dark green cordate leaves, and very large pure white flowers, beautifully imbricated; a rather robust-growing kind, and very free-flowering.

C. Jenny Lind.—Of good hardy constitution, and a free bloomer; the flowers are pure white, streaked with rosy pink, of good form, and of a rich waxy substance.

C. Jubilee.—Flowers imbricated, of moderate size, beautifully striped with deep rose colour.

C. Jubilee rosea.—Flowers nicely imbricated, the colour a beautiful rosy pink.

C. La Maestosa.—A large imbricated flower, of perfect form, with fine large petals; colour a beautiful bright cerise, occasionally blotched with white; a fine variety.

C. Madame Ambroise Verschaffelt.—Foliage large and ample; flowers large and of good form, the colour a light pinkish blush, striped with bright pink.

C. Master Rosa.—A variety of free growth and good habit, with large, shining, dark green leaves; flowers of average size, imbricated, and of excellent form; colour a beautiful rosy crimson.

C. Mathotiana.—The habit of this variety is not so good as that of many others, as it has a tendency to make only one or two breaks after pruning, but when planted in the borders for covering walls, &c., it is unequalled. The colour is deep crimson, the flowers large and very fine.

C. Matteo Malfino.—A beautiful imbricated flower of good form; the petals are bright cherry red, striped down the centre with white.

C. Mrs. Dombrain.—Leaves tapering to a point; flowers

well formed, and of good substance; colour delicate pink, margined with white.

C. Nonpareil.—A variety of great beauty, of medium size and form; the ground colour is delicate flesh, beautifully and regularly striped with rich pink.

C. Pearl.—A dwarf compact-growing plant, with good foliage; flowers pure white, of medium size, with broad imbricated petals of great substance, and cup-shaped. A very desirable variety.

C. planipetala.—A pure white variety, of great substance, and good form; the petals slightly reflexed, and forming a beautiful high centre.

C. Prince Albert.—Flowers of moderate size, imbricated, blush white, with numerous stripes of deep rose; the centre pæony-formed.

C. Princess Frederick William.—This variety is of good constitution, and the foliage is large and imposing; flowers of good form and substance, white, striped and mottled with carnation.

C. Princess Mary.—This is a variety of great merit; the foliage is good and rich green; the petals are finely formed, of good substance, and of a deep rich crimson colour.

C. punicea.—Of vigorous habit, with bold dark green leaves, broadly oval in shape, and terminating in a sharp point. Flowers large, full, very double; the petals of good shape and substance, cupped when in its earlier stages, and then of a rich crimson; as it spreads with age it is slightly paler.

C. Reine des Beautés.—Though not of extra size, this is one of the very handsomest varieties grown; the petals are beautifully imbricated, of a delicate flesh colour, and of superb form.

C. Reine des Fleurs.—Leaves somewhat small, but a

vigorous grower, and of good habit; flowers very large, beautifully imbricated; petals of great substance, and of a deep rich crimson colour.

C. Roma Risorta.—A beautiful variety, having very large flowers of a bright rose colour, streaked with crimson, and the petals all slightly edged with white.

C. Stella Polare.—A lovely variety, of good habit, with handsome foliage; flowers medium-sized, compact, and of superb form; colour rich deep carmine, with a regular and even stripe along the centre of each petal.

C. Targioni.—A fine imbricated flower, white, delicately striped with light rose colour.

C. tricolor imbricata plena.—A very handsome variety, with dark green leaves; the flowers are of good form and substance, the colour is a pure white, flaked with carmine and rose.

C. Virginia Franco.—Flowers of medium size, and good shape; petals pointed and imbricated, streaked with light red, upon a soft blush ground.

C. Vittorio Emmanuelle II.—A large delicate blush flower, with petals somewhat pointed, and a stain of bright rose at the base of each.

C. Zoraide Vanzi.—An exceedingly beautiful flower, of fine form, and very symmetrical; blush white, striped and flaked with deep rose.

In addition to these varieties of *C. japonica*, which is the species more commonly cultivated, we may mention *C. reticulata* and *C. reticulata flore pleno*, as being very showy conservatory plants, of a distinct character, and remarkable for their very large rich rose-coloured blossoms.

Cantua.

This very beautiful plant should be in every collection. It is a native of the Mountains of Peru, and consequently is well

adapted for the greenhouse; indeed, in the southern counties of England it will no doubt be nearly hardy. The soil best suited for it is turfy loam, leaf mould, and sand, with good drainage. Cuttings of the young shoots root readily in sand under a bell-glass.

C. buxifolia.—The leaves of this plant are small, oval, downy, sometimes entire, sometimes three-lobed, and of a light green colour. The flowers are tubular, about four inches long, the tube crimson yellow within, and the limb when expanded of a rich deep rose-colour; they are produced in the greatest abundance during May and June.

CHOROZEMA.

A very handsome genus of Leguminous plants from New Holland. They are highly valuable for the decoration of the greenhouse, and are among the finest of our exhibition plants. The soil best adapted for them is a mixture of peat and loam, with plenty of sand. They bear pruning well, and can be easily grown into handsome specimens. The collector (Labillardiere) first found this genus at the base of some mountains on the South-West coast of New Holland, near some fresh water, after being some time in want, which appears to have suggested the name—from *choros*, a dance, and *zema*, drink. Cuttings of these plants root readily, but the plants obtained from seed are by far the best.

C. cordatum splendens.—A free-growing kind, with light green heart-shaped leaves. It flowers are pea-shaped, and fine large orange and red, very showy.

C. Henchmani.—This very pretty species is, like the rest, a native of New Holland. The leaves are alternate, needle-shaped, and entire, the whole plant having a hoary appearance. The flowers are pea-shaped, bright scarlet, and freely

produced. It is very subject to the attacks of mildew, which must be carefully guarded against by keeping the plant in good order, and dusting slightly with sulphur.

C. varium.—The leaves of this kind, as its name implies, are somewhat variable in shape. It is a compact-growing plant, producing its orange and red pea-shaped flowers in great abundance during the spring months.

C. varium Chandleri.—A fine dwarf-growing variety, with long branching shoots, and racemes of bright orange and scarlet flowers.

Citrus.

Most persons are well acquainted with the Orange Tree, and have seen with admiration the fruits hanging upon them, either in a small or large state. These trees are much grown in Continental gardens for terrace decoration in summer, for which they are well adapted. There is a very extensive collection in the Royal Gardens at Potsdam in Prussia, where a splendid house, 1,000 ft. long, 45 ft. broad, and about 25 ft. high, has been erected for the reception of these magnificent trees. In France, Italy, and Belgium also fine large trees are to be found; but with us they have certainly not been encouraged so much as they ought to have, neither have they received the attention to which they are fairly entitled. It is not our intention to enumerate many of the species and varieties, for they are very numerous, but to describe a few of the most interesting and ornamental of them.

The common Orange, Lemon, Lime, Shaddock, Citron, Paradise Orange or Forbidden Fruit, with their numerous varieties, all belong to this genus, and make noble decorative plants, either in the young state with a few of their golden fruits upon them—when they make most attractive objects

for dinner-table decoration—or when grown into large trees and laden with a profusion of their white and delicately scented blossoms, and with green and ripe fruit. The use to which quantities of the flowers are applied need not be described, as every one knows how essential they are upon certain most interesting occasions.

To grow the plants well, and to fruit them freely, they must be treated liberally. We have found the following mixture suit them well: two parts good turfy loam, one part of fibrous peat, and about the same quantity of sheep or pigeon's manure, adding to these a good quantity of sharp sand, and lumps of charcoal; the whole must be well and thoroughly mixed together. The peat and loam should be chopped with a spade into moderate-sized pieces, but upon no consideration should it be sifted. Orange Trees, when growing, should be kept in a temperature of 60° or 65°, and treated to copious showers from the syringe two or three times in the day; indeed, at any time, saving when they are in flower, occasional syringing is very beneficial, though it must be resorted to in a less degree during the blooming period than in the growing season. These plants can withstand uninjured a very low temperature, but are certainly better if kept at about 48° during winter. The *Citrus* family must have good exposure to the sun to induce them to flower and fruit freely; yet, as the leaves will become yellow and sickly-looking if fully exposed, they must have a certain amount of shading during the brightest part of the day during summer.

These plants require a good share of air in favourable weather, and though not fond of much water, yet a sufficient quantity must be given each time to thoroughly saturate the soil. Many Orange Trees have been killed by the only partial wetting of the mass of earth about their

roots. When in full vigour they will be greatly benefited by occasional mulchings with well-decomposed manure. Though these plants will make pretty objects when mixed with others, yet, to grow them well and produce a large crop of fruit, a house must be devoted to their special culture. Such a house would form one of the most agreeable features in any garden. The trees should be planted out as recommended for *Camellias*. The insects with which these plants become infested are the *Coccus hesperidum*, a kind of scale insect, which must be washed off with warm soft soap and water; the green aphis, which can be easily destroyed with fumigating, without any injury to the plants; and the red spider (*Acarus tellarius*), which, however, will not make its appearance if sufficient moisture is kept in the atmosphere.

C. aurantiacum.—This is the sweet orange, the fruit of which is so largely imported into this country for the dessert. The leaves of this species are somewhat ovate or oblong, rich shining green in colour; it forms a large tree, and when laden with either flowers or fruits is a glorious sight. It and its varieties, which are very numerous, are largely grown in the south of Europe, although it originally belongs to Asia.

C. aurantiacum, var. (*Maltese Orange*).—In appearance differing little from the preceding; the fruit is globose, golden yellow, the pulp deep blood red.

C. decumana (*The Shaddock*).—A very strong-growing plant, with spiny branches, and large, blunt, ovate leaves, clothed with a tomentum on the under side, deep green above; leafstalks with broad wings; fruit very large, round, pale yellow; the pulp is acid, and though not eaten at the dessert, it forms a beautiful ornament to the table. It is cultivated in the West Indies, but is a native of China.

C. Limetta (*Sweet Lime*). — Of vigorous growth, the petioles being slightly winged, bearing large obtuse-ovate leaves, which are serrated at the margins; fruit large, globose, terminating in a blunt point; pulp sweet. Many varieties of this are in cultivation; it is originally from Asia.

C. Limetta Bergamium (*The Bergamote*).—The branches of this variety are furnished with spines; leaves large, oval, sharp-pointed, and serrate at the edges; fruit pear-shaped, smooth, and rich yellow in colour; pulp somewhat bitter.

C. Limetta pomme d'Adam.—This variety has somewhat oblong leaves, rich dark green in colour, with broad wings to the petioles; the branches are striped with white, and furnished with small spines; the fruit is large, round, and of a yellowish green colour; pulp sweet.

C. limonum (*The Lemon*).—Of this plant there are many varieties, differing in the shape of the fruits; thus we have the pear lemon, the fingered lemon, the furrowed lemon, and many others, which form very ornamental trees; the branches are straight and long; the leaves are large, egg-shaped, and bright green in colour; footstalks sometimes winged; fruit pale yellow, long, and ending in a nipple-like point; pulp acid. Universally cultivated in the tropics; native of Asia.

C. Medica (*The Citron*).—Like all the species of this genus, the Citron has many varieties, which have doubtless been brought about through long cultivation: its fruit is very large, oblong in shape, and rich yellow in colour when ripe; it is seldom eaten in any but the preserved state, however. The branches are furnished with spines, leaves blunt and oblong, footstalks not winged. It grows to a large tree, and is a native of Asia.

C. nobilis (*The Mandarin Orange*).—This is a beautiful plant, producing abundance of its rich golden fruit even upon very small plants, when it forms a most beautiful ornament to the dinner table; the leaves are somewhat ovate, bright green; fruit round, and pulp sweet. Native of China.

C. Paradisi (*Forbidden Fruit*).—A robust-growing species, with large oval leaves, slightly notched at the margins, and with winged leafstalks; the fruit large, pear-shaped, and light yellow in colour, with a sweet pulp. Its native country is unknown.

C. vulgaris (*Seville* or *Bitter Orange*).—The leaves of this kind are ovate, with winged leafstalks; the fruit is round, and rich dark orange yellow in colour; the pulp is bitter, and they are chiefly used in making wine, in medicine, and for preserves. Largely cultivated in Europe; native of Asia.

C. vulgaris myrtifolia (*Myrtle-leaved Orange*).—A compact-growing shrub, with small lanceolate leaves of a rich dark green; the fruit is small and spherical, reddish yellow in colour, and contrasting beautifully with the leaves. It makes a handsome plant, when well grown, for the decoration of the dinner-table.

Clianthus.

This is a most useful genus of plants, whether grown in the form of a bush, which may be formed by constant pruning, or allowed to grow as a climber, for which purpose they are admirably adapted, especially when planted out in the open border of the conservatory or at the base of the conservatory wall. The soil most suitable for their growth is rich fibrous

loam and peat in equal parts, with a moderate sprinkling of silver sand. It is necessary to give good drainage, as they require abundance of water when growing; it is also necessary to use the syringe freely during the summer months. The name of Glory Pea is given to the plants of this leguminous genus.

C. Dampieri.—One of the most gorgeous and attractive plants for the cool house. It is of half scandent habit, with neatly-winged silvery gray villose leaves; the flowers are produced from the axils of the leaves, in drooping racemes; the colour a vivid orange scarlet, with an intense black boss or blotch in the centre of the vexillum. Native of Australia.

C. magnificus.—A strong-growing variety of *C. puniceus*, being well clothed with an abundance of pale green leaves and a profusion of large scarlet flowers.

C. puniceus. — Similar to the above, but neater and more twiggy in growth, a most profuse bloomer; flowers scarlet. Native of New Zealand.

CONVOLVULUS.

A large genus containing many beautiful species, both hardy and tender. They are nearly allied to *Ipomæa*, which see for particulars of their culture.

C. mauritanicus.—This makes a very pretty basket plant, and should be grown in every collection of greenhouse plants. It has somewhat ovate leaves, and produces a profusion of its elegant light blue flowers during the whole season. It has also been recommended as a bedding plant, but for this purpose we have not used it; for suspending in baskets it is invaluable. Native of Constantine, Northern Africa.

Correa.

A fine showy genus of *Rutaceæ*, once extensively grown, but now very rarely seen in collections. It is, however, a great mistake to discard such plants as the *Correa* to make way for mere novelty, for the various species of this genus may be made to afford a beautiful display from early autumn through the dreary winter months on into spring, until other plants put on their gay livery. The *Correas* are very easy to cultivate, and require very little attention in the way of training, for their natural habit is bushy. The soil most suitable for the genus is a mixture of two parts good peat to one of fibrous light loam, with a liberal addition of silver sand. Repot when they begin to grow in summer, and when the new soil is tolerably full of roots, stand them in the open air, where they can be protected from the fiercest rays of the sun, or from heavy rains and storms. In autumn they must be returned to the greenhouse or conservatory, when their gay flowers will soon appear, and continue on through the whole winter.

They may be increased by cuttings, but some few thrive better when grafted.

C. brilliant. — A compact-growing variety, with dark cordate leaves, and dense compact habit; flowers brilliant crimson.

C. cardinalis.—This is a slender-growing kind, and consequently requires close pruning. The flowers are produced in abundance from the axils of the leaves, the colour being a bright scarlet, the tubes tipped with green.

C. Harrisii.—A medium-growing variety, with light green apiculated leaves, and fine branching habit; bright scarlet flowers.

C. magnifica.—A rather strong-growing and fine-flowering kind; large white flowers.

C. ventricosa.—A slender-growing twiggy kind, having bright crimson flowers, tipped with green; very pretty and distinct.

CORONILLA.

A genus of *Leguminosæ*, containing many species of great beauty, but as many of them are hardy herbaceous plants, they cannot be included here. The species given below is an invaluable plant for winter and spring decoration. Pot in a compost of peat and loam, with a liberal quantity of sand added, and increase by inserting cuttings of the young wood in gentle bottom heat.

C. glauca.—A pretty greenhouse shrub, with compound leaves, the leaflets of which are smooth, obovate, obtuse, and of a glaucous green colour; the flowers are produced in umbels of seven or eight, and are of a bright yellow colour, very fragrant in the day-time. It flowers from beginning of May all through the summer. Native of France and Sicily.

COSMELIA.

C. rubra.—A very pretty *Epacris*-like plant, producing drooping red tube-shaped flowers in great abundance in April and May. It requires light spongy peat, with a large proportion of silver sand, and a mixture of charcoal. Native of New Holland.

CROTOLARIA.

An extensive genus of *Leguminosæ*, containing many plants of great beauty, as well as others which produce valuable

fibre, &c., &c. The soil best suited for *Crotolarias* is a mixture of loam and peat, with a little sand added. Cuttings of young wood of the perennial kinds root freely, whilst the annual and biennial kinds must be raised from seeds.

C. elegans.—This most beautiful plant, seldom seen in collections, requires to be kept well pruned back, to form a bush while the plant is young; after that the mature wood should be allowed to grow on for flowering. The blossoms are produced in spikes, and are of a rich plum colour. Native of the Cape of Good Hope.

Crowea.

A genus of beautiful greenhouse plants, belonging to the order *Rutaceæ.* The species of *Crowea* are natives of Australia, and succeed well in the greenhouse if they are placed in a situation which, while airy, is not exposed to draughts, and is at the same time well exposed to the light. Some little care is also needed in watering, for if carelessly watered, or crowded up with other plants, *Croweas* will always be unsatisfactory subjects for the cultivator. The soil best adapted for them is two parts peat and one of fibrous loam, with some sand added.

C. latifolia.—Leaves light green, alternate, entire, ovate-lanceolate, and slightly decurrent at the base; flowers light purple or pinkish, produced from the axils of the leaves. It grows from one to two feet high, and blooms throughout the summer and autumn. Native of New Holland.

C. saligna.—Another very handsome species, with pale green lanceolate leaves, which produces its clear pink flowers all through the summer. It comes from New South Wales.

CYCLAMEN.

A genus of *Primulaceæ*, invaluable as spring decorative plants; but though so attractive and useful for bouquet-making at a season when flowers are especially valuable, it has, till within a few years, been very much neglected. The varieties of *C. persicum*, to which we shall principally confine ourselves in these pages, have been intercrossed with great success, and are charming objects, producing their elegant flowers from Christmas to May. They should be cultivated everywhere, for few plants are more easily managed or more beautiful.

These plants can only be increased by seed, which should be sown as soon after it is ripe as possible. We should not defer the operation in any case later than February or March; and if carefully attended to, by being grown in heat and kept shifted whenever the pots have become filled with roots, the plants may be bloomed in a year, while two or even three years are required when they are treated in a negligent manner. After blooming, they must be carefully watered until the leaves decay, gradually withholding it then until none is required, when they should be put into a frame, or some such place, where they can be protected from heavy rains. Potting should be done, or the surface of the soil renewed, just before the corms start into growth. The soil best adapted for them is a mixture of fibrous loam, good leaf mould, and well-decomposed manure, in equal parts, with a liberal addition of silver sand.

If a good stock of these plants is kept up, it is quite possible, by starting a batch at different times, to have a succession of their beautifully marbled leaves and elegant flowers through the whole of the winter and spring. The

varieties of *C. persicum* can be had in almost all shades of colour, from deep red to pure white, in some instances beautifully spotted, and in some varieties very fragrant. They last a very long time in flower, are admirably adapted for cutting for bouquets or for window or dinner-table decoration, and are also most attractive objects when grouped with other plants in the conservatory; in fact, no garden should be without a large stock, and every amateur grower or lover of plants not possessed of a garden may grow these in his windows. Hence they are well suited for London and large towns, where small gardens and an extended love of plants are usually found combined. The following are all varieties of *C. persicum* :—

C. delicatum.—The flowers of this variety are large; petals of the purest white, beautifully enlivened by a bright pink eye.

C. excellent.—Petals very broad and of great substance, snow white, with a vivid red eye; very distinct and desirable.

C. firefly.—A lovely variety, with bright red petals, shaded with crimson; the eye is very dark.

C. mauve Queen.—Flowers very large, and of good substance; petals long, bright mauve colour, with rich deep violet eye.

C. novelty.—A charming kind; petals delicate pink, margined with rose; the eye deep violet.

C. oriflamme.—The petals of this variety are clear rosy red, the eye a beautiful cerise; a rare and very elegant form.

C. purity.—The flowers of this variety are large and of the purest white, being invaluable for bridal bouquets, or any other purpose where white flowers are required.

C. rubrum grandiflorum.—A splendid kind, with large

flowers of great substance; the petals are broad, and rich bright red in colour, with a dark reddish purple eye.

C. rubrum odoratum.—In addition to large deep red flowers, this variety adds the charm of yielding a delicious perfume.

C. rubrum punctatum.—A distinct and rare form; flowers large, with bright red petals, profusely spotted with black.

C. striatum.—In this plant the ground colour is white, beautifully splashed and spotted with rose and purple.

C. violaceum.—Petals very broad and of fine substance, pure white, with a large, deep, rich violet eye, very handsome and distinct.

DAPHNE.

This genus includes some of the most deliciously fragrant plants in cultivation. They are of robust constitution, and succeed well when planted out in the greenhouse, where they will yield an abundance of their very sweet flowers throughout the winter—a season of the year when flowers, especially such flowers as those of the *Daphne*, are particularly valuable. They are somewhat slow-growing plants, and therefore, while small, two growths should be made by them in a season. In order to succeed with this, they must, if requisite, be repotted in February, and then placed in a moist atmosphere, with a temperature of about 55°; they must be treated liberally with water as the roots fill the new soil. In about ten weeks the first growth will be made, when the points of the young shoots may be pinched out, and the plants placed in a drier and more airy situation. As soon as the wood appears well ripened, which will be in four or five weeks' time, they may be again removed to the warm moist atmosphere (without repotting), and kept in it until they have finished another growth. When this has been accomplished, gradually inure

them to bear a drier atmosphere and less heat, so that the wood may be well ripened and the flower buds set. To secure an early crop of flowers, as well as a succession, some of the plants must be placed in gentle heat. These remarks, of course, apply only to those grown in pots. Those which are planted out will succeed under the same treatment as that advised for the *Camellia*, with which the *Daphne* is frequently grown.

The soil these plants prefer is a mixture of two parts rich loam, one part fibrous peat, and one part sand. Drainage must be particularly studied, or *Daphnes* will not thrive.

D. hybrida.—A distinct variety, of slender and compact growth, with small ovate leaves, and fine purple flowers, very freely produced.

D. indica alba (*odora*).—This variety does not succeed well in pots, on account of its susceptibility to red spider and canker, but when planted out in the border for the purpose of covering back walls, trellis, pillars, &c., it is invaluable, producing an abundance of pure white flowers of the richest fragrance throughout the summer months.

D. indica rubra.—A free-growing evergreen shrub, having long lanceolate leaves, of a light green colour. The flowers are produced in heads from the mature growths, the individual flower being large, white, with a red under surface.

Daviesia.

A handsome genus of *Leguminosæ*, not many of which are to be found in cultivation, plant-growers having for some reason discarded so many New Holland and Cape hard-wooded greenhouse plants, which we hope soon again to see taking their place in our collections. The *Daviesias* should be potted

in loam and peat, with a little sand, and placed in an airy situation in the greenhouse.

Cuttings of half-ripened wood root freely, inserted in sand, and covered with a bell-glass.

D. latifolia floribunda.—The leaves of this plant are somewhat ovate in shape, and light green in colour. The flowers are bright yellow, with the upper part of the flower (*vexillum*) reddish yellow, and borne in great profusion from May to July. Native of Tasmania.

D. umbellata.—A small neat-growing species, having narrow lanceolate leaves. The flowers are produced in umbels in great profusion; the colour light orange and yellow. Native of New Holland.

DILLWYNIA.

An exceedingly interesting class of Leguminous plants from Australia. There have been many varieties introduced, and many of these are still in cultivation, but it will be only necessary here to describe a few. They all require about the same treatment and soil, and succeed best in good fibrous peat, with a liberal supply of silver sand, and plenty of drainage for the roots. It will be necessary to prune back well after flowering, and when the plants have nicely broken, they may be placed in the open air for the summer, being protected from heavy rains.

D. cinnabarina.—A slender-growing species, which produces very long spikes of flowers; colour bright cinnamon red.

D. pungens.—A pretty compact-growing plant, with very small spiny leaves, and a profusion of bright yellow flowers. It blooms from June to August.

D. splendens.—The finest of the species; habit neat and compact, with long branches of bright orange and red flowers.

Dracophyllum.

A small genus of *Epacridaceæ*. The species here given is the best, and is a valuable exhibition plant. The soil best adapted for it is good fibrous peat, chopped into small pieces, but not sifted; to this must be added a liberal quantity of silver sand, and it is of great importance that the plants should be firmly potted. Some grow this plant upon a balloon-shaped trellis, in which manner the flowers are brought all to one level, but when grown as a compact bush it has by far the best appearance, though it takes a much longer time to make a specimen, as it requires more frequent stopping. It is an elegant plant, and should be more generally grown.

This plant may be increased by cuttings of young shoots inserted in sand under a bell-glass, but they require careful watering, and the glass should be frequently wiped to remove damp.

D. gracile.—The cauline leaves of this species are lanceolate-subulate, fringed at the margins with long hairs and recurved. The flowers are freely produced in capitate spikes, and are of a pure white colour. It blooms during April, May, and June, and is a splendid exhibition plant. Native of New Holland.

Epacris.

This genus gives its name to a small order of plants (*Epacridaceæ*) consisting of elegant and highly ornamental shrubs, bearing harsh, dryish, prickly foliage, and handsome tubular flowers. The species are all natives of New Holland —indeed, the order is almost exclusively Australian. The flowers are axillary, and generally pendulous, and are so freely

produced along the thickly leafy branches, that they have the appearance of long leafy spikes, in which the blossoms lean all one way; there are, however, some few exceptions to the manner of their disposal. The soil best adapted for these plants is good fibrous peat, with a liberal addition of silver sand. After the flowers have faded, the erect-growing kinds should be cut back nearly to the old wood, and placed in a rather close frame to induce them to break; and when the young shoots are about an inch in length, they should be re-potted into fresh soil, care being taken that they are *firmly* potted. The lax or pendulous growers must not be pruned in so closely as the erect kinds, and are better trained upon balloon trellises. When the plants are beginning to get established in the new soil, they should be stood in the open air during the summer, but in such a position that the sun does not burn the young and tender roots, and where heavy rains can be kept from them. Cuttings of the tips of young and slender shoots strike tolerably free; they should be inserted in sand and placed under a bell-glass, autumn and spring being the best time to perform the operation.

E. Butterfly.—A very free late bloomer; flowers pure white, beautifully suffused with rose.

E. campanulata.—Flowers bell-shaped, rich red, produced in long spikes. Native of Tasmania.

E. campanulata alba.—Resembling the preceding in shape of flowers, and with the same reflexed ovate leaves, but pure white in colour. Native of Tasmania.

E. carminata.—A variety of good compact branching habit, with large bright red flowers.

E. Devoniensis.—This is somewhat in the style of *E. miniata;* the flowers are long, and of a deep scarlet colour.

E. eclipse.—A variety with fine bright crimson flowers, tipped with white.

E. elegans.—A charming variety; flowers long and of a delicate soft rose colour, the lobes slightly paler.

E. exquisita.—A very profuse bloomer; flowers very large, and bright rosy pink in colour, lobes a shade lighter.

E. fireball.—A beautiful form; its flowers when fully expanded are bright orange scarlet, with the lobes tipped with rosy pink; in the bud they are rich crimson.

E. hyacinthiflora.—Flowers pink, spikes long; the plant itself being of robust habit.

E. hyacinthiflora carminata.—Flowers produced in long compact spikes, tube stout, lobes recurved, colour bright carmine and rose; a very handsome variety.

E. hyacinthiflora candidissima.—Flowers pure white, and one of the best of its class.

E. hyacinthiflora fulgens.—This is probably the best pink variety grown.

E. impressa.—A beautiful species, with lanceolate-sessile leaves, and short tubular crimson flowers; it is later flowering than many of the varieties, usually coming in about April. Native of New Holland and Tasmania.

E. Ingramii.—A very handsome form; flowers deep red in the tubes, the lobes pinkish

E. Lady Alice Peel.—A very distinct kind, with beautiful large salmon-coloured flowers.

E. Lady Panmure.—This is a fine variety, with pure white flowers, which are beautifully suffused with rose.

E. Lowii.—In this the flowers are produced in great abundance, and have pure white tubes, tipped with rosy purple.

E. miniata.—A species of more lax growth than most others; indeed, it represents a natural division of the family, consisting of species somewhat scandent in habit, and which should be either trained upon a wire trellis, or staked to

make a specimen, and which, moreover, should not be pruned so hard as the dwarf-growing species and varieties. The leaves are heart-shaped, sharp-pointed, and of a shining dark green; the flowers are long, pendulous, leaning all on one side, bright vermilion in the tubes, the limb and end of tube white. Native of New Holland.

E. miniata splendens.—A great improvement upon the preceding, with flowers upwards of an inch and a-half long; tubes bright scarlet, the end and limb pure white. This makes a most telling plant for public exhibition, and should be in every collection.

E. Mont Blanc.—A compact grower and late flowerer; its pure white flowers, with yellow throats, are borne on long dense spikes.

E. multiflora.—Flowers bright red, tipped with white.

E. nivalis compacta.—A beautiful variety, being a great improvement upon *E. nivalis*, producing dense spikes of snowy white flowers.

E. odorata alba.—This variety is of compact habit, and produces dense spikes of pure white flowers, deliciously sweet.

E. picturata.—The flowers of this variety are large, and of a bright pink colour.

E. Princess Royal.—A very desirable variety, with the flowers rich rose, tipped with white.

E. pulchella.—A somewhat straggling-growing species, but worthy of a place in a collection of these plants on account of its distinctness. The leaves are concave, closely set upon the branches; the flowers form a dense spike, and are small, short, pure white, becoming tinged with pink as they advance in age; it is a late bloomer. Native of New South Wales.

E. rosea alba.—Flowers short, stout, white, beautifully tinged with pale rose.

E. splendens.—Flowers rich salmon pink.

E. Sunset.—This variety is very effective; the spikes are long and dense, the flowers are rich red, tipped with rosy pink.

E. tricolor.—A fine variety, with the flowers of a rich red, shading to rose, the limb pink, produced in long dense spikes.

E. variabilis.—A species with short tubular rich pink flowers, produced in March and April. Native of Tasmania.

E. Vesta.—A very fine white variety, of neat compact habit.

E. Vesuvius.—A fine variety, with bright reddish crimson flowers.

E. Viscountess Hill.—A superb variety, producing abundantly its brilliant orange-scarlet flowers.

Erica.

Perhaps no genus of greenhouse plants is so generally attractive, or so universally admired, as that of the Heaths. But extensive as is the order *Ericaceæ*, the true Heaths (*Erica*) are only to be found in Africa, at the Cape of Good Hope, and in Europe, though other members of the order are found in almost every quarter of the globe. This genus is generally considered a very difficult one to manage, and to a certain extent this may be true, but those persons who carefully and regularly attend to their plants, not allowing them to suffer in any way, but rather by strict attention anticipating their wants, will find little or no difficulty in cultivating them. The soil must be good fibrous peat, chopped into small pieces, with a liberal quantity of silver sand added. The plants should be potted very firmly, and

as water should be given pretty freely during summer, the drainage must be perfect. The usual notion that Heaths do not require much water is a mistake, and there is no doubt that more plants are killed through the want of water than through having too much, that is, if the drainage is in a good sound state. We have often remarked that those plants whose death has been attributed to over-watering, are those which have at some time suffered severely through drought, either from accident or negligence. In such cases, as soon as the evil is discovered, an abundant supply of water is at once given, the watering being repeated several times in order to restore the drooping branches, but the plant never does recover; it is then turned out of its pot, and pronounced to have been killed by watering, but this is erroneous, for though the soil does appear saturated with water, that is not the cause of death. The true cause of death in such cases is the want of water, for in consequence of drought the plant has had its roots killed, or so much weakened that they are past recovery when the water is given; and it is in consequence of this absence of root-action that the soil under the circumstances becomes saturated. In watering, care should be taken that soft or rain water only is applied to these plants, for hard water soon injures them, and often causes them to cast their foliage

Ericas then (with a few exceptions) are tolerably easy of culture. Different opinions are held respecting the proper time for repotting. Our plan is to shift the plants soon after they show signs of growing, and when this has been done a little time we stand them in the open air, but it is best to protect the pots from the sun, or the tender roots will be destroyed. By this treatment a shorter, firmer growth is obtained, and the wood is well ripened, thus ensuring good

flowers, and enabling the plants to stand the better in-doors through the winter. About the end of September or the first week in October it will be necessary to remove them to their winter quarters, giving an abundance of air, but avoiding cold draughts. It is very important not to apply fire heat, unless to exclude frost, or to dry up the damp after a long succession of wet or dull weather.

Little more need be said here respecting the culture of Heaths. They are not liable to the attacks of insects. The scale will sometimes gain a footing, but should be carefully picked off by hand. Mildew is their worst enemy, but careful watching will prevent this working any mischief; strict attention to watering being very necessary, so that the root-action and that of the leaves may be duly balanced—not one portion of the plant excited, whilst the other is at rest. When mildew does appear, flowers of sulphur must be lightly dusted upon the affected parts, and continued until the fungus is destroyed. We may just note, that we have seen the little parasitical native plants called Dodders (*Cuscuta europæa* and *C. Epithymum*) do much mischief before being discovered. The seeds of these parasites, being in the soil, germinate in spring, and as soon as the plants are long enough to cling to the Heath, the roots which are in the soil die, and the Dodder begins the life of a true parasite, growing into and binding up the stems of the plant it is upon, until if not removed it does serious injury, even if it does not cause death. Finally, to be successful in the cultivation of *Ericas*, drain well, pot very firmly, and water freely, but judiciously.

E. Aitoniana.—A slender-branching species; leaves in threes, bluntly linear, armed at the point with a short spine, and having a groove down the centre, glossy, very sticky, and lying close to the stem; the flowers are terminal, three

or four together, tubes slender, an inch long, with a large spreading four-lobed limb; they are at first white, changing to pink with age, and sticky. It seems to be a rare species in its native habitat, and that is a somewhat moist and warm situation; it blooms during July and August. Cape of Good Hope.

E. Aitoniana superba.—An improved form of the species, with larger flower tubes, and more compact habit of growth, flowering about the same time. A garden variety.

E. Aitoniana turgida.—Leaves very slender, slightly turned back; flowers in terminal umbels, the tubes much swollen at the base, and contracted above the middle, enlarging slightly to the mouth, white, tinged with pink, the segments ovate, white; it blooms during July and August. A garden variety.

E. Aitoniana Turnbullii.—A beautiful variety, with much broader leaves; flowers in umbels of six or more, the tubes upwards of an inch long, as thick again as the species, and with large spreading oblong lobes to the corolla, white, changing to pink; blooms in June, July, and August. Of garden origin.

E. alopecuroides.—Plant very downy; leaves three in a whorl, linear; flowers ovate, reddish purple; blooms during the autumn months. Cape of Good Hope.

E. Andromedæflora.—This belongs to a section the species of which are extremely difficult to strike from cuttings, and consequently have to be increased from seeds. The leaves are arranged in threes, deep green, tipped with red; flowers globose, the calyx nearly as long as the corolla, and of a delicate pink, the corolla rosy red; it blooms very freely in April, May, and June. Cape of Good Hope.

E. ampullacea.—Leaves linear, somewhat triangular, ending in a sharp point, hairy on the edges, and becoming

recurved with age; flowers sticky, in terminal umbels, about an inch long, flask-shaped, very much inflated at the base and contracted in the neck, white, tinged with reddish pink; it blooms during May and June. Cape of Good Hope.

E. Archeriana.—A fine species, with linear-acute leaves, serrulate at the edges; the flowers are produced in terminal and subterminal whorls, tubular, about an inch in length, and of a dark scarlet colour; it blooms during August and September. Cape of Good Hope.

E. aristata.—Leaves oblong-obtuse, and terminated by a bristle, which is recurved; the flowers are large, about an inch and a-half long, tubular, largest at the base, reddish purple in the tube, the limb white; blooming during May, June, and July. Cape of Good Hope.

E. aristata Barnesii.—A beautiful variety, remarkable for the size of its flowers, which are produced in terminal whorls; the tube is shining red, with a deeper red mouth, the segments of the limb very broad, and pure white; the foliage and habit is also very good. It is a hybrid from *E. aristata major* and *E. Sprengelii.*

E. aristata virens.—This form differs from the variety *Barnesii* in having four leaves, not five, in a whorl, and in having more flowers in the terminal clusters, which are of a shining dull red in the tube, deep brownish red at the mouth, the segments blush white.

E. Austiniana.—A very fine and showy kind, with somewhat ovate-lanceolate, smooth, spreading leaves; flowers produced in whorls, tubular, the tubes narrow, upwards of an inch in length, white streaked and suffused with carmine; a free-flowering good exhibition plant. July and August.

E. Beaumontiana.—This species blooms during June and July; the leaves are linear, from five to six in a whorl, smooth; the flowers drooping, campanulate, white, tinged

with purple, with the style slightly exserted. Cape of Good Hope.

E. Bergiana.—A free-flowering species, with linear-oblong, pubescent, spreading leaves; flowers terminal, drooping, peduncles hairy, with a few scaly bracts, the calyx reflexed, ciliated, the corolla smooth, campanulate, purple; in full beauty in May and June. Cape of Good Hope.

E. bruniades.—A beautiful woolly little plant, of free growth and branching habit. The leaves are short, linear-oblong, and, as well as the branches, clothed with white woolly hairs; flowers in small pendulous umbels, the calyx enveloped in long white woolly hairs, out of which the pink corolla emerges, and beyond this the jet black stamens; it blooms in great profusion, and is a charming object when in flower. Cape of Good Hope.

E. campanulata.—Leaves awl-shaped, smooth, three in a whorl; flowers drooping, campanulate, bright yellow; it flowers very abundantly during May and June. Cape of Good Hope.

E. Candolleana.—Leaves erect, clothed with long hairs at the edges, and somewhat oblong; flowers upwards of an inch long, produced in umbels, rosy red at the base, white towards the end; blooming during June and July.

E. Cavendishiana.—Leaves subulate, slightly spreading, bright dark green; flowers tubular, nearly an inch long, stout, and of a rich bright yellow colour; it forms a splendid shrub, and flowers in great profusion during May, June, and July.

E. cerinthoides.—A very showy species, of somewhat lax growth; the leaves are arranged four in a whorl, linear-lanceolate, and clothed with long hairs at the edges; the flowers are umbellate at the points of the shoots, nearly an inch long, and in clusters of from fifteen to twenty or more,

tubular, slightly contracted at the mouth, deep scarlet, hairy; it blooms during August and September. Cape of Good Hope.

E. cerinthoides coronata.—This kind differs in having shorter and narrower leaves, which lie closer to the stem; the flowers are brilliant scarlet, arranged in heads of from twenty to thirty; it blooms during the late summer and early autumn.

E. colorans superba.—An improvement upon the original *E. colorans*; the leaves are linear, slightly spreading and ciliated; flowers tubular, rosy red and white, produced on long dense spikes during spring and early summer. A garden variety.

E. densa.—A free summer-flowering species, of erect habit, producing long, slender, linear, slightly spreading dark green leaves; flowers tubular, red, the tubes short and thick, contracted towards the mouth, the segments small, deeper coloured than the tubes. Cape of Good Hope.

E. depressa.—A very distinct-growing kind, having dark green subulate leaves, rather spreading; it is of pendulous habit, and of slow growth, and requires to be well exposed to the sun during the autumn, after making its growth; flowers pale yellow, produced from May to July. Cape of Good Hope.

E. Devoniana.—A very handsome kind, with broad, somewhat bluntly oblong leaves, turned back, armed at the points with a sharp hair, and ciliated at the edges; flowers umbellate, tubular, inflated at the base, and nearly an inch long, rich purple in colour; blooms during the summer months.

E. Douglasii.—A slender-branching kind, with short, blunt, spreading leaves, armed at the point with a long awn; the flower tubes flesh-coloured, slender, about an inch in length, with large spreading white segments to the limb; the umbels of bloom are in full perfection in June and July.

E. elegans.—A lovely plant, belonging to the same section as *E. Andromedæflora*, and requiring to be grown from seed. The calyx, instead of being green, is as richly coloured as the corolla; the leaves are long, fleshy, glaucous, linear-acute, arranged in six rows upon the branches; flowers in terminal umbels of from four to six, or more, the calyx bright rosy red, nearly as large as the corolla, which is rose-coloured, the lobes of the contracted tube tipped with green; it blooms during the spring and summer months. Cape of Good Hope.

E. elegans glauca.—A variety of the preceding, freer in growth, with longer and, as well as the branches, more erect and very glaucous leaves; flowers the same colour, but larger; it blooms at the same time as the species, and like it, continues a very long time in full beauty. Cape of Good Hope.

E. eximia.—Leaves linear, but slightly spreading, hairy; flowers tubular, about an inch long, scarlet, tipped with green, produced in whorls; blooms in May and June. Cape of Good Hope.

E. exsurgens.—A strong-growing species, with smooth, subulate, erect leaves, nearly half-an-inch long; flowers tubular, an inch and a-half long, slender at the base, and dark orange in colour, with style and stamens exserted. Cape of Good Hope.

E. Fairrieana.—A beautiful form, resembling some of the *tricolors* in general appearance; leaves large, oblong-lanceolate, and furnished with long white hairs at the edges; flowers produced in terminal umbels, the tubes upwards of an inch long, very much inflated at the base, suddenly contracted at the top, colour rich rose, changing to purple in the neck, the limb white.

E. ferruginea.—A handsome species, but rather subject to mildew in winter, if any moisture is suffered to lie upon its

hairy foliage; the leaves are linear, slightly spreading, and furnished at the margins with a profusion of rusty-coloured hairs, which give the name and character to the plant; flowers in whorls, a little less than an inch long, base of the tube red, shading off to rosy red towards the apex; it blooms in May and June. Cape of Good Hope.

E. florida.—Leaves, linear pilose, giving the plant a grey appearance; flowers terminal, in small umbels; produced in June and July. Cape of Good Hope.

E. gracilis.—A beautiful ornamental kind; leaves as well as the branches and stems quite smooth, linear, four in a whorl; flowers small, reddish purple, forming long terminal spikes, produced at the end of winter and beginning of spring.

E. gracilis autumnalis.—Very similar in general habit, but invariably booming during the autumn and early winter months.

E. grandiflora.—A beautiful species with smooth linear leaves, which gradually taper into a sharp point; the flowers are tubular, arranged in whorls, forming fine clusters of from fifteen to thirty blooms, with about an inch of the green leaves above them; they are of a bright glossy yellow, and upwards of an inch long; filaments red, projecting beyond the tube; it blooms in June and July. Cape of Good Hope.

E. grandinosa.—A pretty species, with smooth linear leaves, three in a whorl; flowers small, ovate, pure white, pendulous, produced in threes; blooming during spring and early summer. Cape of Good Hope.

E. gemmifera.—A very handsome species, resembling when out of flower a diminutive *E. Massoni*. The leaves are oblong, ciliated with long hairs, armed at the point with a stiff hair, and somewhat appressed; the flowers are slightly pen-

dulous, arranged in whorls of six to eight, or more, about an inch long, tubular, the tubes stout, deep red at the base, passing into orange red, and finally tipped with green; the footstalks of the flowers are clothed with long white hairs, giving them quite a hoary appearance; it flowers in July and August. Cape of Good Hope.

E. hybrida.—An erect-growing species, with long, linear, vivid green leaves; flowers an inch in length, bright red, and produced in long dense spikes in May and June.

E. hyemalis.—A splendid spring-flowering plant, with linear, sharp-pointed leaves, which are covered with short hairs; the flowers are bell-shaped, rosy pink at the base, and white towards the ends, produced in long dense leafy spikes, some ten or twelve inches in length; for blooming in winter and early spring this plant is invaluable.

E. infundibuliformis.—A handsome species, with filiform, blunt, smooth, dark green erect leaves; flowers terminal, tubular; the tubes slender, nearly an inch long, of a light red colour, the segments of the tube large, spreading, pure white. It blooms in great profusion in late summer and autumn. Cape of Good Hope.

E. intermedia.—A fine plant, producing long spikes of drooping white flowers during the autumn months; the leaves are somewhat ovate-lanceolate, smooth, and spreading.

E. Irbyana.—Leaves linear-acute, short, and spreading; flowers upwards of an inch in length, tubular, slightly swollen at the base, white, tinged with red, green at the neck. Its terminal umbels of flowers are produced in June and July. Cape of Good Hope.

E. jasminiflora alba.—Leaves linear-oblong, ciliate, armed at the point with a long stiff awn, and lying close to the stems; flowers umbellate, flask-shaped, upwards of an inch

long, pure white. It blooms during June and July. A garden variety.

E. jubata.—A beautiful species, with linear, somewhat sticky, incurved leaves, four in a whorl; flowers with a flat limb and short tube, red; blooming in July and August. Cape of Good Hope.

E. Linnæana superba.—A magnificent variety, and a great improvement upon the species. The leaves are linear-lanceolate, hairy, arranged four in a whorl. The flowers are upwards of half-an-inch long, bell-shaped, rich purple and white, produced in dense spikes of from six to twelve inches in length, in March and April. Of garden origin.

E. lutea.—Leaves linear, smooth, closely pressed to the much-branched stem; flowers, both calyx and corolla, pale yellow. It forms dense masses of bloom during spring and early summer. Cape of Good Hope.

E. McNabiana.—Leaves short, thick and blunt, armed with an awn at the point, slightly spreading; flowers sticky, nearly an inch and a-half long, stoutest a little below the middle, tube rosy red, deep reddish purple at the neck, with a white limb. It blooms in May, June, and July. Cape of Good Hope.

E. McNabiana rosea.—This differs from the preceding by having longer and more recurved leaves, which are closely set upon the stems and branches, and serrate at their edges. The flowers are about the same size, bright rose in the tubes, veined with a deeper shade of the same colour, neck deep purple, limb white; blooms in May, June, and July. A garden variety.

E. mammosa.—Leaves linear-subulate, smooth, and erect; flowers in umbels, drooping, reddish purple, produced in great profusion in August and September. Cape of Good Hope.

E. Marnockiana.—This beautiful variety has oblong spreading leaves, ciliated, and armed at the point with a very long stiff hair; the flowers are tubular or pitcher-shaped, inflated at the base, and narrow at the neck, with a small spreading limb; the tubes are smooth (not sticky), and of a glossy rich purple colour. Blooms in July and August.

E. Massoni.—A splendid species, and one of the most difficult to preserve in perfect health, being very subject to mildew, through moisture being retained amongst its closely-set hoary leaves. It is of slow growth, compact, and free-branching; leaves oblong, four in a whorl, serrate, and very woolly; flowers sticky, tubular, and upwards of an inch long, rich deep red, tipped with yellowish green. This magnificent species blooms during July and August, and continues a very long time in full perfection. Cape of Good Hope.

E. metulæflora.—A fine species, but one that is very difficult to grow into a good specimen; leaves five in a whorl, awl-shaped, ciliated at the edges; flowers dark red, in terminal umbels of from twelve to twenty, smooth, cylindrical, swelling in the middle, and thus giving the name of Nine-pin Heath to this plant; it blooms from May to July. Cape of Good Hope.

E. mutabilis.—One of the freest flowering of the whole genus, but very apt to suffer in the winter with mildew; the leaves are arranged four in a whorl, linear-obtuse, and hairy; flowers in terminal umbels, the tubes three-quarters of an inch long, smooth, bright red; it blooms nearly the whole season. Cape of Good Hope.

E. odorata.—Leaves glandularly ciliated, four in a whorl; flowers campanulate, the footstalks pink, the corolla white, and yielding the fragrance of Otto of Roses; it blooms during May, June, and July. Cape of Good Hope.

E. ovata.—Leaves oblong, beautifully ciliated, slightly

spreading; flowers in terminal umbels, tubular, with a narrow throat, nearly an inch and a-half long, much inflated, red, shading to purple, the lobes small, white; it blooms in June and July. A very fine plant.

E. Parmentieriana rosea.—A plant of compact, dwarf, free-flowering habit; the leaves are bright dark green, linear, and spreading; flowers produced usually in fours from the points of each lateral growth, and thus forming immense clusters of deep rosy purple flask-shaped blooms in July and August.

E. Paxtoniana.—A very fine variety, with linear-oblong leaves, which are very hairy, and much recurved; flowers in umbels of eight or ten, tubular, stout, and about an inch long, scarlet, shading to white, with a greenish purple neck. A beautiful and showy plant.

E. persoluta.—A handsome free-growing species, producing flowers in the early spring months in great profusion, and forming garlands of bloom a foot or more long; the flowers are small, bell-shaped, and deep blush colour; in perfection in March and April. Cape of Good Hope.

E. persoluta alba.—A very elegant spring-flowering species; leaves short, linear, smooth; flowers campanulate, pure white; produced in great abundance. Cape of Good Hope.

E. persoluta rubra.—A variety of the preceding, which it resembles, saving in the colour of the flowers, which are red.

E. perspicua nana.—In habit and appearance somewhat like *E. ventricosa*, but more slender in its growth; leaves linear-lanceolate, pubescent, and deep green in colour; flowers in terminal clusters, tubular, the tubes an inch long, slender, pinkish white, the limb white; it is a free bloomer, continuing through April, May, and June. Cape of Good Hope.

E. primuloides.—Of dwarf, compact habit, with leaves arranged in fives, very closely set together, and somewhat recurved; flowers in terminal umbels of four and five, before

expanding deep red, the lobes of corolla large, flat, rosy purple in colour; it blooms in May and June. It is often found in collections under the name of *E. dilecta*. Cape of Good Hope.

E. princeps.—A beautiful species, with linear, hirsute, ciliate leaves, and umbels of short, thick, tubular flowers, which are of a bright scarlet colour, and produced during May and June. Cape of Good Hope.

E. princeps carnea.—Resembling the preceding in habit and appearance, but the flowers are longer, the tube narrower, and flesh-coloured instead of scarlet; a very desirable plant, blooming the same time as the species.

E. profusa.—A variety raised between *E. McNabiana* and *E. aristata major*, and an abundant bloomer; the flowers are bright pink, with white disc. A very desirable variety.

E. propendens.—A very free-flowering plant, with downy leaves, four in a whorl; the flowers are bell-shaped, and purple; it blooms during June and July very abundantly. Cape of Good Hope.

E. propendens tubiflora.—Leaves linear, erect, clothed at the edges with white hairs, which give the whole plant a greyish aspect; flowers bell-shaped, rosy purple at the base, and white in front; produced in profusion in May and June. A garden hybrid.

E. pyramidalis.—A profuse spring-flowering species; leaves linear, downy, arranged in fours; flowers terminal, and forming long racemes of rosy pink bloom, in March and April. Cape of Good Hope.

E. regerminans.—A very pretty soft-growing kind, with linear, recurved leaves; flowers small, but produced abundantly, pale red in colour, and globular; blooms during May and June. Cape of Good Hope.

E. retorta.—Leaves somewhat ovate, bent back, and fur-

nished at the points with a long spine; flowers arranged in terminal many-flowered umbels, tubular, glutinous, gradually becoming narrower at the point, where they are bright red before expanding, the basal part white, tinged with pink; it blooms from June to end of August. Cape of Good Hope.

E. retorta major.—A closer-growing form of the preceding, with the flower tubes stouter, pink, reddish purple at the points, the lobes white; it blooms during the whole summer. A garden variety.

E. rubens.—Of slender growth, with linear, spreading leaves, which are rather rough, and bright green; flowers produced abundantly in July and August, globose, dark red, with the style exserted. Cape of Good Hope.

E. rubra-calyx.—This is a very pretty erect-growing kind, with linear-lanceolate leaves; flowers tubular, white, the calyx rich reddish purple, produced on the lateral growths, and forming dense spikes.

E. rutilans.—A variety produced between *E. Fairreana* and *E. Massoni*, having foliage partaking of the character of both parents; flowers produced in large whorls, and bright fiery crimson in colour. It is a most desirable plant.

E. sanguinea.—Leaves linear and pointed, spreading; flowers tubular, nearly an inch long, blood red; stamens and style exserted; a free-flowering handsome species. Cape of Good Hope.

E. Savileana.—Leaves linear, erect, four in a whorl, and smooth; flowers round or slightly oblong, red or reddish purple; it blooms during June, July, and August. Cape of Good Hope.

E. scabriuscula.—A handsome and free-flowering species; leaves bluntly oblong, dark green above, paler below, and, as well as the stems and branches, clothed with rough glandular hairs; flowers campanulate, white, produced from the points

of all the shoots, during April and May. Cape of Good Hope.

E. scariosa.—Leaves linear-oblong, smooth, and with the margins turned back; flowers small, but produced in great profusion, the calyx and corolla pure white, with the jet black stamens exserted; it blooms during June and July. Cape of Good Hope.

E. Sebana.—Branches crowded, leaves linear and slender; flowers upwards of an inch long, pendulous, the calyx in the form of bracts and coloured, corolla orange, the stamens long and much exserted, giving it a very singular and handsome appearance; it flowers freely in April and May. Cape of Good Hope.

E. Sebana fusca.—Flowers resembling those of the species, but rich dark brown in colour, and completely hiding the foliage when in bloom, which is generally about the month of May. Cape of Good Hope.

E. Sebana lutea.—A very handsome plant, resembling the species, but with flowers rich yellow; blooms in April and May. Cape of Good Hope.

E. Sebana rubra.—Leaves blunt, thick, in other respects resembling the species, but the corolla is rich reddish brown; it blooms in May and June. Cape of Good Hope.

E. Shannoniana.—A strong-growing noble species, with linear-lanceolate, rigid, somewhat spreading leaves; flowers produced in terminal umbels, the tubes about an inch and a-half long, much inflated, with a narrow neck, white, tinged with purple; blooms in June, lasting two or three months. Cape of Good Hope.

E. Spenceriana.—A handsome variety, with slightly spreading, smooth, subulate leaves; flowers tubular, an inch in length, dull purplish lilac, tipped with white, produced in abundance during the spring and early summer months.

E. suaveolens.—Leaves oblong-lanceolate, ciliated; flowers pitcher-shaped, pale red, the anthers black; blooms during August and early part of September. Cape of Good Hope.

E. sulphurea.—A free-growing plant, with erect linear leaves, clothed with short hairs; flowers produced on the ends of the lateral growths, and thus forming long spikes of bloom, tubular, and slightly curved, sulphur yellow, clothed with long light-coloured hairs, calyx woolly; it blooms during the summer months. Cape of Good Hope.

E. taxifolia.—Leaves three in a whorl, smooth, and spreading; flowers in terminal clusters, erect, globose, the calyx and corolla bright pink; blooming in May and June. Cape of Good Hope.

E. Thunbergii.—A beautiful and most distinct species, and one difficult to grow into a good specimen. The leaves are linear, blunt, glaucous, and arranged in threes; the flowers are pendulous, upon long footstalks, the calyx yellowish green, as long as the corolla, which is round and white, the limb composed of four large ovate segments, forming a bell-shaped cup of rich scarlet; it blooms in May and June. Cape of Good Hope.

E. tricolor.—Leaves slightly spreading, linear-oblong, ciliate, and armed with a stiff straight hair at the point; flowers in umbels, tubular, about an inch long, reddish at the base, passing into white, and tipped with green; blooms in May, June, and July. Cape of Good Hope.

E. tricolor flammea.—This variety is of free growth; the leaves are bluntly oblong, slightly recurved, armed at the point with a long straight awn, and the edges clothed with such a profusion of long hairs as to give the whole plant a hoary appearance; the flowers are flask-shaped, with a considerably extended base, nearly an inch and a-half long,

flame red at the base, passing into white, with the top of the neck green; it blooms during the summer months. A garden variety.

E. Turnbullii.—A very distinct variety, which is named in honour of its raiser, the veteran heath-grower and hybridiser, Mr. Turnbull, of Bothwell Castle; it is a free-growing kind and an abundant bloomer. The flowers are very showy, produced in umbels of from three to six, tube upwards of an inch and a-half long, deep reddish pink in colour, the limb being white and the throat dark purple. It is invaluable as an autumn-blooming plant, its usual time of flowering being August and September.

E. tricolor inflata.—A paler variety than any of those here enumerated, with the stems and branches densely clothed with hairy leaves, which are erect and but slightly spreading; flowers about an inch long, much inflated at the base, and with a very narrow neck; a distinct and handsome plant of garden origin.

E. tricolor rubra.—Leaves very closely set, and but slightly spreading, hairy; flowers tubular, slightly inflated at the base, about an inch long, and reddish purple in colour, shading off to white, with a green neck; it blooms during May, June, and July. A garden variety.

E. tricolor speciosa.—This form has linear-lanceolate, hairy leaves, slightly spreading; flowers in umbels, upwards of an inch long, slightly swollen below the middle, where they are rosy red; blooming during the summer months, it makes a valuable plant for exhibition purposes. A garden variety.

E. tricolor Wilsoni.—A splendid exhibition variety; the leaves oblong-lanceolate, slightly spreading, and clothed with a profusion of hairs; flowers in umbels, an inch and a-half long, much inflated at the base, and suddenly contracted at

the neck, rosy red, white, and green in colour; blooming in June and July. A garden variety.

E. triumphans.—This belongs to the same section as *E. Andromedæflora*, *E. elegans*, &c. It is of robust growth, with somewhat spreading dark green leaves an inch long, and with but a few short hairs; the flowers are large, globose, white, the calyx being the most conspicuous portion; it blooms in May and June, and continues a long time in full beauty. Cape of Good Hope.

E. tubæformis.—This variety will no doubt make a valuable exhibition plant, as it blooms about May, and continues for a long time in full beauty. It is the result of a cross between *E. aristata major* and *E. McNabiana*; the flowers are somewhat like those of the former, with the tube bright shining red, the limb white, with a blotch of rose colour on each lobe; to this it adds the free growth of the latter.

E. ventricosa.—Compact and free-branching; leaves dark green, four in a whorl, linear, with the edges ciliated; the flowers are produced in terminal umbels of about twelve, tubular, quite smooth, about three-quarters of an inch long, swollen at the base, and contracted at the neck, the lobes bent back, colour porcelain white, tinged with flesh; it blooms in June and July. Cape of Good Hope.

E. ventricosa alba.—A handsome free-flowering variety, with linear, sharp-pointed leaves, clothed at the edges with short white woolly hairs; flowers tubular, about an inch long, china white in colour; it blooms during May and June.

E. ventricosa breviflora.—A handsome plant, and very distinct; the leaves are erect, nearly half-an-inch long, linear, and but slightly clothed with hairs; flowers short, but stout,

thickest at the base, and of a rosy red colour; it blooms in May and June.

E. ventricosa carnea.—Leaves short, rather thinly set; flowers delicate flesh colour, tubular, slightly swollen at the base, and about an inch in length; blooming in June and July.

E. ventricosa coccinea minor.—A lovely variety, producing its numerous trusses of flowers in the greatest profusion, even upon plants not more than five or six inches high; the leaves are dark green, linear-acute, slightly spreading; flowers slender, tubular, the tubes about three-quarters of an inch long, porcelain white, the lobes of the limb reflexed, and bright red; it blooms during the three summer months.

E. ventricosa fasiculata rosea.—This beautiful variety is densely clothed with spreading dark green leaves, which are furnished at the edges with short white hairs; flowers stout, an inch long, bright rose colour in the tubes, deep purple at the neck, the segments of the limb reflexed; it flowers abundantly in June, July, and August.

E. ventricosa grandiflora.—Leaves long, straight, dark green, and clothed with very short woolly hairs; flowers tubular, the tubes stout, tapering from the base, upwards of an inch long, and of a rosy purple colour; blooming in June and July. It, like all of the *ventricosa* section, continues in full beauty for a long time.

E. ventricosa splendens.—This is a superb variety, with thick-set, long, linear, recurved leaves, furnished with long white hairs at the edges; flowers produced in great profusion, nearly an inch long, swollen in the middle, the tubes china white, the neck and limb rosy purple and white; it blooms in June, July, and August.

E. ventricosa tricolor.—Leaves linear, sharp-pointed,

slightly reflexed, and clothed at the edges with white woolly hairs; flowers tubular, nearly an inch long, the tubes blush, the neck carmine, with white reflexed segments to the limb; it blooms during July and August.

E. Vernoni.—Leaves ovate-lanceolate, downy, spreading; flowers flask-shaped, much swollen at the base, and nearly an inch and a-half long, white, the neck green, the segments of limb spreading, somewhat ovate. A very fine exhibition plant.

E. vestita alba.—In this variety the leaves are very slender, and soft to the touch; the flowers are pure white, scarcely an inch long, produced in whorls of from ten to twenty flowers, a short distance below the ends of the branches; it blooms during the summer months, and is a very elegant plant.

E. vestita coccinea.—A beautiful erect-growing kind; the leaves are linear, dark green, thickly set upon the branches, and very slender; the flowers are produced in whorls, about an inch from the ends of the branches, and are an inch or more in length, tubular, slightly curved, and of a deep rich red colour; it blooms during June and July. A garden variety.

E. vestita incarnata.—In this variety the flowers are upwards of an inch long, arranged in whorls of from ten to twenty near the tops of the branches, and of a delicate flesh colour or pink; blooms in June and July. Cape of Good Hope.

E. vestita rosea.—A lovely variety, with flowers produced in whorls of from twenty to thirty, scarcely so long in the tube as the form called *coccinea*, but of a rosy red colour, blooming in August and September.

E. Victoria.—This beautiful kind has thick, somewhat ovate leaves, armed at the point with a long hair, and round the edges with short stiff spines; flowers produced

in umbels, flask-shaped, an inch or more long, deep purple, with white segments; it blooms during summer, and is an invaluable exhibition plant.

E. Westphalingia.—An erect-growing kind, with linear-obtuse leaves, and a profusion of rosy red tubular flowers, an inch in length; it blooms during the summer months.

E. Wilmoreana superba.—A lovely kind for early spring flowering. The leaves are linear, covered with short white hairs, as also are the branches; flowers bell-shaped, upwards of half-an-inch long, rich purple, the ends white, produced upon the short lateral growths, and thus forming spikes of blooms twelve and eighteen inches long. A garden variety.

ERIOSTEMON.

A genus of compact free-growing evergreen shrubs, some of which are well deserving a place in every collection. They are natives of New Holland, and belong to the order *Rutaceæ*. The plants should be potted in a mixture of loam and peat in equal parts, made very sandy; artificial heat is injurious to them, but care must be taken that damp be kept from them in winter; they delight in an airy situation in the New Holland house, and are exceedingly valuable for exhibition purposes, as they are easily retarded for flowering at different periods during the spring months.

E. buxifolius.—The leaves of this species are dark green, ovate, alternate, entire, smooth, armed at the apex with a stiff bristle. The flowers are situated in the axils of the leaves, and of a pinkish white colour; it grows from two to five feet in height, and blooms from April to June. Native of Port Jackson.

E. cuspidatus.—A strong-growing kind, with oblong-lanceolate leaves, of a glaucous green colour, and ending in a hooked bristle; the racemes are four or five-flowered, sometimes terminal, but usually axillary, the flowers pinkish rose; it blooms from May to October. Found in rocky situations in New Holland.

E. linearifolius.—A handsome plant of good habit, with linear, obtuse, entire, smooth, dark green leaves, covered with glandular dots. The flowers are pinkish white, and produced in great abundance from March to June. Native of New Holland.

E. myoporoides.—This is a very pretty species, growing from two to three feet in height or more. The leaves are linear-lanceolate in shape, dotted with glands, and terminated with a hard bristle. The racemes are three-flowered, produced from the axils, the flowers white, and produced from May to July. Native of New Holland.

E. neriifolius.—A very pretty shrub, the leaves of which are lanceolate, armed at the apex, and of a dull deep green. The flowers are produced three together, from the axils of the leaves, and are of a pink colour. Native of New Holland.

E. pulchellus.—This, as its name implies, is a very pretty species; the leaves are short, entire, quite smooth, dark green, covered with glands, and armed at the apex with a sharp bristle. The flowers are white, very freely produced from March to June. Native of New Holland.

E. scaber.—A handsome species, with linear, entire, dark green leaves, armed at the point with a long sharp bristle, and quite rough in appearance from the glandular dots with which they are covered. The flowers are produced in great

profusion from March to June, and are pinkish white. Native of New Holland.

ERYTHRINA.

A genus of *Leguminosæ*, remarkable for its fine bold leaves and handsome flowers. The plant requires to be kept quite dry during winter, and, when they show signs of starting in spring, they should be shaken out of the soil, and repotted. The soil best adapted for them is a mixture of loam, peat, and well-rotted manure, in the proportion of about two parts of loam to one of each of the others, and to this may be added a little sand. Though they will do very well in the greenhouse, yet a temperature of about 60° and a moist atmosphere is most conducive to their well-being. When the flowers are about to open they should be removed to a cooler house, which will cause the blooms to last much longer. After flowering they will go to rest again until the following spring, the shoots having been cut back to the old wood. In the South of England and Ireland many of the species will thrive admirably in the open air the whole year, if the crown is well protected in winter. They are easily increased in spring if the young shoots are taken off when about an inch or two in length, but they should have a heel, or piece of the old wood, attached; insert them in sand and keep rather dry at first.

E. Cottyana.—A robust branching variety, both leaves and stems being of a pale green. The flowers are deep rich red, and most abundantly produced in terminal racemes; the leaflets are ovate, the terminal one ovate-oblong.

E. crista-galli.—This is often called the Cock's-comb Coral Tree. The stem is woody, the footstalks prickly, and the

leaflets ovate, leathery, of a glaucous green. It produces large terminal racemes of bright deep scarlet papilionaceous flowers, which remain in beauty for a long time. Native of Brazil.

E. floribunda.—A very compact-growing kind, with spiny stems, and fine long terminal spikes of rosy crimson flowers; the leaflets are oblong and sharp-pointed, and the terminal one cordate.

E. Madame Belanger.—This is a very dwarf variety, and a free bloomer; the flowers are of a velvety rich dark reddish crimson colour. Garden hybrid.

E. ornata.—A handsome variety, growing about two feet high, and sometimes flowering even before it attains the height of one foot. The racemes are long, and the flowers large and closely set upon the spike, dark vermilion in colour. It blooms earlier than the others, and lasts a very long time. Garden hybrid.

E. ruberrima.—This is one of the dwarf varieties of the old *E. crista-galli*, and unites the splendid flowers of that plant with a dwarf habit. It is a profuse and regular bloomer, and its spikes are large, bearing quantities of its large brilliant crimson rosy-tinted flowers. It is a garden hybrid, thriving well under the treatment recommended above, and admirably adapted for planting out in beds in the summer.

Genethyllis.

A small genus, but the plants contained in it are very ornamental. The decorative property, however, does not lie in the flowers, for they are small, but in the large campanulate involucres which surround them, and which are beautifully coloured, and being of good substance they last for several months in full beauty. They are all excellent plants

for exhibition purposes, and should be grown in every collection. The soil best adapted for their culture is good sandy peat, with a little turfy loam added; drainage must be kept in perfect order, and water carefully given, for these beautiful plants are somewhat difficult to manage.

G. fimbriata.—This rare and very pretty species is a small bushy plant, and produces its bell-shaped involucres in great profusion, which are of a beautiful rose colour, about an inch long, and strongly fringed round the margins. This will no doubt make a useful exhibition plant, and be a charming companion for the other two species. It blooms in May and June. Native of South-West Australia.

G. fuchsioides.—A very free-growing species, producing red branches and linear-oblong leaves, which are about an inch long, dark green above, and paler below. It produces abundance of its deep red bell-shaped involucres during the spring months, which remain a long time in full beauty. Native of Australia.

G. tulipifera.—This is the finest species with which we are acquainted, and is indispensable as a flowering greenhouse plant. The leaves are about an inch long, thick and fleshy, oblong in shape, and ciliated at the edges, the upper surface dark green, pale below; the pendulous bell-shaped involucres are large and freely produced, the ground colour being pale straw, beautifully streaked and flaked with crimson. It blooms during spring and early summer, and remains in perfection a very long time. Native of Swan River.

GENISTA.

Hardy Leguminous greenhouse shrubs, of dwarf compact habit, and of great beauty when in flower. As the flowers

are produced in great abundance during winter and spring, the plants are of the utmost value for the decoration of the conservatory or drawing-room, for, on account of their hardy constitution and excellent habit, they continue in full beauty for a long time; they are, moreover, well adapted for cutting for bouquets. The soil best suited for them is a mixture of loam and peat, in about the proportions of two parts of the former to one of the latter, mixing some silver or sharp river sand with it. After flowering they should be pruned back hard, cutting to within a short distance of the old wood; the plants should then be placed in a moist atmosphere to facilitate growth, but when the growing season is past they should be stood out in the open air, to thoroughly mature their wood, and ensure an abundance of bloom.

They are readily increased from cuttings of the young wood.

G. Everestiana.—This is a very finely-coloured variety, producing its spikes of fragrant deep golden or orange yellow flowers in great abundance during the spring months. It is a compact-growing plant, of great beauty. A garden variety.

G. filipes.—A handsome plant, producing its pure white sweet-scented flowers during winter and spring. It is somewhat pendulous in habit, and this we have frequently seen turned to good advantage, by grafting it upon young straight stems of the common Laburnum of different heights, in which state it is very effective as a conservatory plant. It is often found under the name of *Cytisus filipes*. Native of Madeira.

G. racemosa.—A compact much-branched shrub, growing two or more feet high, with trifoliate leaves, having oblong-spathulate leaflets, and numerous terminal racemes of rich

yellow sweet-scented flowers; it blooms during the whole winter.

G. racemosa elegans.—This variety differs from the preceding in being more compact in growth, and in producing much longer racemes of flowers, which are of a bright yellow, and very sweet. A garden variety.

G. racemosa superba.—This is a robust, yet withal a compact-growing plant, producing very long racemes of bright deep golden yellow flowers all through the winter and spring months. The foliage of this variety is larger than any of the others, and is partially covered with hairs on both surfaces.

GNIDIA.

A genus of pretty, old-fashioned greenhouse plants, now seldom seen. They are natives of the Cape of Good Hope, and are nearly allied to *Pimelia.* The soil best adapted for their culture is good fibrous peat, to which a small portion of light loam and a considerable quantity of silver sand should be added. In spring the plants should be shifted into the before-mentioned compost. The species given here is rather delicate, and should be placed near the glass, to promote short growths, and a moist atmosphere must be maintained during the growing season. The plants may be stood in a cool frame during the summer, but must not be placed out of doors, like *Ericas;* about the end of August they should be returned to a light airy part of the greenhouse, where they will stand until the flowering season.

G. pinifolia.—This species should command a place in every collection of plants, as it is an abundant bloomer, each shoot bearing a head of creamy white or light yellow flowers,

which are deliciously sweet, and being produced about March or April, are especially valuable.

Gompholobium.

A genus of handsome Leguminous Australian shrubs, of compact habit, which should be grown in a mixture of peat and loam, chopped into small pieces, but *not sifted;* a liberal quantity of silver sand and lumps of charcoal should also be added to the compost.

It is easily increased by cuttings or by seeds.

G. barbigerum.—This plant grows two or three feet in height; the leaves are alternate, the leaflets linear and dark green. The flowers are about an inch in length, golden yellow in colour, and produced in great abundance from April to June. Native of New Holland.

G. polymorphum splendens.—A scandent plant, with linear or somewhat oblong leaflets, armed at the apex with a stiff bristle. The upper part of the flower is large, scarlet on the inside, yellow at the base, and purple on the outside; it blooms freely from April to July, and is a very handsome species. Native of New Holland.

Gordonia.

This family is nearly allied to *Thea* and *Camellia.* The soil best suited for it is a mixture of about equal parts peat, leaf mould, and loam, with the addition of a little sand. It may be increased rapidly by layers, and it also strikes readily from cuttings, if these are taken off with a heel and inserted in sand, after which they require the protection of a bell-glass for a short time.

G. javanica.—This forms a dwarf branching shrub, with

alternate ovate-lanceolate, entire, dark green leaves, of a leathery texture. The flowers are white, composed of five spreading obovate petals, produced from the axils of the leaves. Its blooming season is about August, and it continues a long time in perfection. Native of Java, on the mountains.

GREVILLEA.

An extensive and interesting genus of *Proteaceæ*, many of the species of which are remarkably handsome, either in respect to their foliage or flowers. Those here noticed are desirable for the latter. The plants require a compost of rough peat and loam, blended with sufficient silver sand to keep it porous. They bear the hardiest greenhouse treatment. These plants are increased by cuttings, and also by seeds when obtainable; in the former case they often remain some length of time before roots are emitted.

G. alpestris.—This handsome species forms a large bush in its native wilds, and blooms without intermission the whole season through. In our greenhouses it flowers usually during spring and early summer, even while the plants are quite small. The young branches are downy, the leaves spreading, reflexed, somewhat ovate in shape, and dark green on the upper surface. The flowers are freely produced in terminal corymbs, red, passing into yellow.

G. rosea.—A very compact and handsome-growing species, in which the leaves are mostly linear, and always end in a sharp spine. The flowers are rich bright rose colour, and produced in the greatest profusion from the points of all the shoots; it blooms in May and June, and is very nearly allied to *G. lavandulacea*, if the two are not really identical. Native of South Australia.

Habrothamnus.

H. elegans.—This plant is a member of a very large family, and is an old and well-known species, thriving under almost any treatment. It is especially useful for covering a pillar, rafter, or back wall in a conservatory. The leaves are alternate, entire, oblong-lanceolate, about three inches long, deep green above, pubescent beneath. The flowers are tubular, about an inch in length, of a deep reddish purple colour, and are freely produced in dense racemes. If the flowers are artificially impregnated, they produce beautiful bunches of large deep red berries, which make the plant doubly ornamental. Cuttings of this plant root with the greatest ease. It is a native of Mexico, growing at an elevation of nearly 4,000 feet.

Hebeclinium.

A genus of soft-wooded composite plants, of easy culture, admirably adapted for winter decoration, the hardiness of their constitution allowing them to be used in any situation under cover, while the flowers may also be used with advantage for bouquet-making. The soil should consist of two parts loam, and one each of leaf mould and well-decomposed manure, with a little sand added. If large specimens are required, the plants, after blooming is past, and having been rested for a short time, should be cut back to within one or two eyes of the old wood, and placed in a close moist atmosphere for a short time; but if small plants only are required, they should be struck from cuttings every year, when they will make little bushes by autumn if properly tended.

H. atrorubens.—A very useful and ornamental plant.

forming handsome little bushes if treated in the way recommended above. The stems and branches are dark red; the leaves large, opposite, somewhat ovate, and toothed at the edge; the *Ageratum*-like flower-heads are reddish, shaded with lilac, and produced in abundance during the autumn and winter. Native of Mexico.

H. ianthinum.—This is the most common species, and is a most useful plant for winter flowering. The leaves are large, ovate, soft, deeply serrate at the edges and dark green. The flower-heads are purple, produced in very large corymbs from the points of the branches; it is an abundant bloomer, and well deserves cultivation in the choicest collection for its winter flowers. Native of Mexico.

H. macrophyllum.—A gigantic form of the preceding; the leaves are large, cordate, and dark green; the corymbs of flower-heads are reddish lilac, and produced during autumn and winter in great profusion. Native of Mexico.

HOVEA.

This genus of *Leguminosæ* consists of Australian shrubs of great beauty, which should be grown in every collection. For soil, &c., see *Daviesia*. The *Hoveas* make fine plants for exhibition, furnishing a colour which is much wanted amongst a collection of plants, and yet we now seldom see them grown for this purpose. If required for the decoration of the conservatory or greenhouse, they make some of the finest of all plants that can be grown. Cuttings of the young wood root tolerably free if inserted in sand under a hand-glass.

H. Celsi.—This very handsome plant has alternate, simple, broadly lanceolate leaves, somewhat blunt, mucronate, and of a very dark green. The flowers are pea-shaped, and of a beautiful deep blue colour. It grows several feet in height,

and produces its blooms in great abundance through the months of April, May, and June. Found near Bathurst, Australia.

H. pungens major.—A very fine plant, and one likely to be very serviceable for exhibition purposes, as well as for winter flowering. The leaves are linear and pointed, and the flowers of a rich deep blue. It is a native of Western Australia.

IMANTOPHYLLUM.

The genus *Imantophyllum* belongs to *Amaryllidaceæ*, and will be best remembered by referring to its original type, *Clivea nobilis*, which has been known many years in our gardens as a most desirable plant for decorating the greenhouse during the early spring months. *I. miniatum* is one of the most useful plants we have for exhibition or for home decoration. Where there are about six specimens of this plant, they may be had in flower all the year round, by bringing them into heat at different times. We are seldom without one in bloom here. It is also a most useful plant for cutting for dinner decorations or for bouquets.

These plants are increased by division of the stems, and also by seeds, which are freely produced; as they are apt to vary somewhat when increased by seeds, it is best to divide any particular good variety if desirable to make a quantity.

I. Gardeni.—This very handsome winter-blooming plant has its leaves arranged in two rows, and all springing from the root; they are from one to two feet long, blunt-pointed, and of a deep green. The scape is about the same length as the leaves, and bears an umbel of ten or fourteen flowers, which are from two to three inches long, curved downwards, and of a reddish orange colour passing into yellow; they last many weeks in great beauty. Introduced from Natal.

I. miniatum.—This very striking species is one of the most ornamental greenhouse spring-flowering plants we have, and one that no collection should be without. It forms a stout, bold-looking tuft of ligulate acute, distichous leaves, from one to two feet high, broadly sheathed at the base, and of an intense green colour on both sides. The flower scapes rise to about the same height as the leaves, and support a large umbel of from ten to twenty blossoms, which are individually upwards of two inches in expansion, and about the same in length, somewhat vase-shaped, the outer half of the segments a fine deep orange colour, shading to vermilion, the lower part of a deep buff, and the anthers and style bright yellow. It blooms at various seasons. It is a native of Africa.

KALOSANTHES.

A genus of succulent Crassulaceous plants, forming elegant shrubs when placed under judicious treatment. The flowers are disposed in dense terminal heads, and, in some kinds, of the most brilliant scarlet, rendering them remarkably conspicuous objects. They delight in a rich loam, with plenty of sand, and good drainage, and will repay the trouble of a little heat when growing. Whenever a shoot has grown a few inches in length, it should have its top pinched out to encourage lateral growths; this, having been continued until the end of September or beginning of October, must then be discontinued, as upon the shoots thus formed the flowers will be produced the following spring. They should be kept rather dry during winter, but by no means allowed to shrivel. We have sometimes had these plants very much injured by the larva of a small weevil (*Curculis sulcatus*); this beetle pierces the stem and deposits its eggs, which when hatched live upon the pith and stem of the plants, to their great detri-

ment, sometimes even killing them; if therefore the plants show signs of shrivelling, and are not dry, let them be examined carefully for the larva of the beetle. Increase by cuttings.

K. coccinea.—This fine old species has been an inhabitant of our gardens for upwards of a hundred and fifty years, and is one of the grandest plants we have. The leaves are opposite, flat, and fleshy, ovate-oblong in shape, and dark green in colour. The flowers are upwards of an inch in length, produced in many-flowered umbels at the end of every shoot, and bright scarlet. It should be in every garden. There are many varieties, not differing much in habit and appearance, but only in the colour of the flowers, some being flesh colour, some red, others red and white, &c.; all are good, and a collection of them should be grown by all lovers of plants. Native of the Cape of Good Hope.

Labichea.

L. diversifolia.—A curious and old-fashioned greenhouse plant, of compact bushy habit, with the dark green leaves unequally digitate, and the leaflets linear-lanceolate, terminating in a sharp spiny point. The flowers are bright golden yellow, the base of the upper petal stained with red; they are produced in great abundance from April to June. Cuttings of the young shoots, inserted in sand and placed under a bell-glass, root readily. Native of Western Australia.

Lachenalia.

A beautiful family of Cape bulbs, of dwarf habit, belonging to the *Liliaceæ*. They have pretty spotted orchis-like leaves,

and erect spikes of handsome pendulous tubular flowers. Formerly these plants were great favourites, but they have been put on one side to make room for novelties, though their beauty is again becoming appreciated, and we now see them more frequently in our greenhouses. They are very valuable as early-flowering plants, and are easily forced into flower during winter, when flowers of any kind are especially valuable. With these, as with many other plants, no doubt there will be different opinions as to the best mode of treatment. We recommend, in order to have the flowers at Christmas or by the new year, to pot some of the bulbs about the middle of June, and to grow them in a cool frame until the end of October or the beginning of November, at which time they should be removed into moderate heat, for they will not bear a very high temperature. To ensure a succession of flowers, pot another set of bulbs about the beginning of July, and others again at the end of the same month. The soil best adapted for them is a compost of good loam and peat, with a little sand and well-decomposed manure added. In watering, care must be taken to gradually withhold the supply as the foliage begins to show signs of decay; and when they have quite gone to rest, the pots with the bulbs must be placed in a cool dry place, until the proper time for repotting comes round. There are a great many species, and all, with but few exceptions, are natives of the Cape of Good Hope. They are increased by divisions.

L. luteola.—A beautiful plant, with a pair of dark green oblong-lanceolate leaves, a stout peduncle, and closely-set pendulous flowers of a uniform bright yellow, with the exception of the outer petals, which are faintly tipped with green; it blooms in April. Cape of Good Hope.

L. orchidioides.—This plant has two oblong-lanceolate dark green leaves, profusely blotched with reddish brown;

the peduncle is also spotted with the same colour. Flowers large, closely set, and occupying nearly the whole length, straw colour and white, sweet scented; it blooms in April and May. There are many different-coloured varieties of this species. Cape of Good Hope.

L. pendula.—Leaves erect, ovate-lanceolate, dark green; the peduncle is stout and spotted, and the flowers closely set; the outer petals are nearly the length of the flowers, with rounded points of an orange red colour, tipped with green, the inner ones spreading at the mouth, and variegated with purple and green; flowers in April. Cape of Good Hope.

L. quadricolor.—A most brilliant coloured species, with long narrow pendulous channelled dark green leaves, one being always longer than the other; the peduncles are slender, and the flowers pendulous, large, and widely set; the outer petals are short, bright red and orange in colour, tipped with green, the inner ones orange yellow, spreading at the mouth, where the colour is rosy purple; it blooms during February and March. Cape of Good Hope.

L. quadricolor var. *maculata.*—This differs from the preceding in having its two unequal leaves, which bend over from above the middle, beautifully spotted with reddish brown; it is also a stronger plant, and the spike of bloom is more compact. The flowers are borne upon long footstalks, and are pendulous, the corolline lobes rounded, and rich crimson at the extremity, the remaining portion being orange yellow, tinged with green; the outer or sepaline division are red at the base, and tipped with green. It blooms during the early spring. Cape of Good Hope.

L. tricolor.—Leaves in pairs, oblong-lanceolate, spreading, dark green, spotted with dull purple; flower spike erect; the flowers when young are orange, green, and yellow, but with

LAPAGERIA ROSEA.

CHILI.

age they lose the brightest colour; it flowers during the spring months. Cape of Good Hope.

LAPAGERIA.

This genus comprises only one species, as far as we are aware, but it and its varieties are perfect gems; it belongs to the natural order *Smilaceæ*, and requires to be potted in rough turfy peat and loam, with an abundance of drainage. It will form a splendid object trained either upon a balloon or parasol-shaped trellis, or upon a rafter or wall. It delights in a cool temperature, and we have seen it in great splendour upon the roof of a temperate fernery with a northern aspect. The soil should be rough and open, composed of turfy loam, peat, and lumps of sandstone; the drainage must also be kept in thorough working order, as they cannot suffer stagnant water about their roots with impunity. They are readily increased from seeds, and also, though less rapidly, by layers and cuttings.

L. rosea.—A fine evergreen twining plant, producing cordate bright shining green leaves, and large, pendulous, rich rosy crimson, bell-shaped flowers, in great abundance, and forms a most beautiful plant for exhibition, or, indeed, for any purpose; it blooms for several months, and should be in all and every collection of plants, however small the collection may be. Native of Chili.

L. rosea alba.—This beautiful variety resembles the species in every respect saving the colour of the flowers; here the large waxy bells are of a beautiful pure white, and form a splendid contrast to the lovely soft rose colour seen in the flowers of the species. It is a native of Chili.

Leschenaultia.

This is a beautiful genus of Goodeniaceous plants, generally considered difficult to cultivate, which, to a certain extent, is the case, and hence, because under injudicious treatment they are apt to look unhealthy, and are liable to suffer from damp, they have been cast aside by many amateurs. This, however, may be easily overcome. We grow our plants in a well-ventilated house, and place them within about three feet of the glass, and we are never or rarely troubled with mouldly-looking tops. The soil best adapted for these plants is good fibrous peat, with a liberal addition of sharp sand; they like a rather larger shift than most other plants, and consequently both drainage and watering must be strictly attended to. The fine plants seen at our exhibitions a few years back must be in the recollection of all who visited the shows, and it is much to be regretted that they should have been allowed to drop out of cultivation, since amongst them may be found some of the best plants we have, whether for public exhibition or home decoration. This is especially true in the case of *L. biloba*. No other plant that we know is capable of producing so charming an effect in a collection of plants as this brilliant species, whose rich bright blue flowers have a most gorgeous effect.

L. Baxteri.—This is a soft Heath-like plant. The leaves are light green in colour; the flowers are similar in size and shape to *L. formosa*, but differ from that species in being of a rich salmon colour; it blooms during spring and summer. Native of New Holland.

L. biloba major.—This very handsome species is a much stronger grower than *L. formosa*. Its leaves are dark green, narrow, quite entire, and the flowers are much larger than

L. formosa, and of a lovely dark blue colour; it is invaluable as an exhibition plant, and also for conservatory decoration; it blooms in May and June. Native of New Holland.

L. formosa.—A very handsome plant, with somewhat the appearance of a Heath, but is quite soft to the touch. It is one of the most showy of greenhouse plants, and is of great value when grown into a good specimen as an exhibition plant. The leaves are narrow, entire, bright green; and the flowers, which are produced in great profusion, are of an intense scarlet. Native of New Holland.

LEUCOPOGON.

A genus of *Epacridaceæ*, containing many species, which are very pretty when in bloom, and form very ornamental objects for the conservatory during winter, owing to the pleasing contrast between their clusters of bearded snow-white flowers and their glossy bright green leaves. The flowers are also very serviceable for bouquet-making. With but one exception they are natives of Australia, and nearly all have white flowers. For general culture, see *Epacris*, the treatment recommended for which will suit them in all respects, saving that they must not be cut back so hard as the species of that genus.

L. Australis.—A shrub growing from two to four feet high; leaves narrow, lanceolate, upwards of an inch long. The flower spikes are produced from the axils of the leaves, and are many-flowered, the flowers pure white; it blooms during winter and early spring. Native of South Australia and Tasmania.

L. lanceolatus.—A handsome shrub, attaining the height of ten or twelve feet in its native country; it, however,

flowers very freely while small. The leaves are lanceolate, flat, and dark green; flower spikes axillary, the flowers white, opening in winter and early spring, and continuing until summer. Found on the mountains of New South Wales.

L. Richei.—This species forms a shrub some three or four feet high, furnished with oblong-lanceolate, smooth, shining leaves, about an inch long, and having margins slightly turned back. The flower spikes are axillary, the flowers pure white, produced in great abundance during the whole of winter and spring. Native of New South Wales and Tasmania.

Lilium.

The beauties of this lovely genus of plants cannot be adequately described. It contains a vast quantity of species, some requiring greenhouse culture, and others quite hardy, and indeed it may be questioned whether or no many of the kinds which are usually grown in-doors might not be as successfully cultivated if treated as hardy. The usual method of drying off the bulbs of this class of plants is quite erroneous; indeed, we were led to this conclusion some few years back, upon examining bulbs of *L. speciosum rubrum*, which were dug up from an open border in the month of January. We found thick fleshy roots striking deep down in the soil, and quite active, and it is evident that plants in this condition, instead of having to make new roots to support the growth in spring, as they have to do under the drying system, are at once in full working order, ready to throw vigour into the upward growth as soon as the warmth of the season induces activity. We therefore advise all growers of this magnificent family of plants to avoid drying

off the bulbs, since we have seen this system carried out in many places with great success. The basis of the soil should be a mixture of good loam and peat, in equal parts; about one-fourth of the whole mass should be good well-decomposed manure, and a little sharp sand should be added.

Some time in the month of February the plants should be shifted into this compost, and placed in a cool house, in a temperature that will just exclude frost and nothing more. Water must be used very sparingly at first, and the quantity gradually increased as the plants progress in size and strength. After flowering, the plants should not, as is too often the case with these and many other bulbous plants, be cast on one side because their beauty is past, but the work of maturing the bulbs for the following season's display should be set about in good earnest. If the plants are starved at this stage, it must naturally follow that the quality and quantity both of growth and bloom from the bulbs so treated must be inferior. Rather let double care be bestowed upon them, especially in regard to the waterings, while a little weak liquid manure, given occasionally, will be of the greatest assistance. As the leaves and stems decay, and thus give evidence that the bulbs are going to rest, water should be gradually withheld; and when the stems and leaves have quite decayed, they may be placed under the stage until the following spring, when, as soon as they show signs of growth, they should be turned out of the pots, the drainage and the edges of the old ball of earth taken carefully away, and the bulbs potted in pots of a larger size, without disturbing the bulb in any way.

L. auratum.—This, the most magnificent member of the genus, a flower whose beauties no pen can adequately describe, is a native of Japan. The flowers are from ten to

twelve inches, or even more, in diameter, pure white, beautifully spotted with reddish crimson, a beautiful band of golden yellow running down the centre of each petal in most of the plants, though in some varieties the band is chocolate-coloured, in others crimson; in addition to these beauties of colouring and marking, the flowers are deliciously fragrant, one bloom being sufficient to perfume a large conservatory. Mr. Fortune speaks of its growing three or four feet in height, and producing sometimes as many as five large flowers, but under cultivation it far exceeds these proportions. A plant we saw at Melchet Court, under the management of Mr. Cross, was at least nine feet in height, and bore the immense number of one hundred and fifty-one flowers, all large and fully expanded. It is a plant which every person, rich or poor, should have in his or her garden.

L. giganteum.—As its name implies, this is a gigantic Lily. It grows, when the bulb is strong, to about eight feet in height, with a very stout stem, and large cordate shining dark green leaves. The large flowers are produced in terminal racemes, and are pendent and trumpet-shaped, white, with reddish violet streaks, and very fragrant. Native of Northern India.

L. japonicum.—In this species, the flower stems usually attain the height of eighteen inches or two feet, and bear large white fragrant trumpet-shaped flowers, which have the mid-ribs of the lobes tinged with purple. It is a lovely autumn-flowering kind, often seen in gardens under the synonym of *L. Brownii*. From Japan.

L. longiflorum.—Although this species is quite hardy, it is a very ornamental plant for conservatory decoration. The flowers are trumpet-shaped, pure white, and deliciously sweet; it grows about eighteen inches high. Native of Nepal.

L. speciosum album.—The varieties of *L. speciosum* make very handsome specimens for the decoration of the conservatory in autumn. The flowers are in the present kind reflexed, and of a pure white colour. Native of Japan.

L. speciosum grandiflorum.—As its name implies, this is a large-flowered form—indeed, it is the largest of the section; flowers white, stained with rich crimson.

L. speciosum Harrisoni.—A variety of dwarf habit, the flowers very large, pure white, suffused and spotted with rich rosy crimson.

L. speciosum punctatum.—Resembling *album*, except in having the white flowers delicately spotted with bright pink. Native of Japan.

L. speciosum rubrum.—This variety has white flowers, which are densely spotted and blotched with rich crimson; a very handsome form. From Japan.

L. Szovitzianum.—A pretty plant, growing about three feet high, and yielding a profusion of its large and handsome turban-shaped flowers, which are bright pale yellow, dotted with black. It is also known as *L. colchicum.*

L. Thunbergianum.—A dwarf species, sometimes called *L. venustum*, seldom exceeding a foot or a foot and a-half in height; leaves ovate-lanceolate, dark green; flowers large, spreading, of a rich bright orange colour; it blooms during July and August. From Japan.

L. Thunbergianum aureum nigro-maculatum.—A variety growing about one foot in height, and producing large deep yellow blooms, prettily spotted. Native of Japan.

L. Thunbergianum grandiflorum.—This variety has very large cup-shaped dark orange red flowers, slightly spotted towards the centre; it grows about the same height as the preceding, and blooms about the same time.

L. Wallichianum.—This species, though considered hardy,

makes a beautiful pot plant, but it must not be dried so much as many others. The leaves are long and narrow, almost linear towards the top, which is a distinguishing character from its near ally *L. longiflorum*. The flowers are white, with a long narrow tube, and a limb nearly eight inches across; it is very fragrant, and grows from three to four feet high, producing from one to three flowers on each stem, in August. Native of Northern India.

L. Washingtonianum.—An extremely beautiful species, and although at present rare in our collections, through having but recently been introduced to our collections in a living state, it nevertheless has been well known to science for some years. It is a fine robust-growing species, the leaves being verticillate, and the flowers large and trumpet-shaped: they measure some eight or nine inches across; the colour is white, beautifully tinged with lilac purple, and deliciously fragrant. Add to this the fact that some twelve or eighteen flowers are borne upon a stem, and we have said enough to enlist the interest of all plant-growers. It comes from the western slopes of the Californian Sierra Nevada.

Lisianthus.

A beautiful genus of American plants, belonging to the Gentianworts, having opposite leaves, and bearing terminal clusters of flowers, which are, however, very dissimilar in shape in the various species. All are well deserving the attention of plant-growers. They may be increased by cuttings of the half-ripened wood, and by seeds.

L. Princeps.—This is a compact, branching, shrubby plant, of great beauty, bearing opposite oblong-lanceolate, acute, dark green leaves, which are, however, somewhat paler below. It usually attains a height of about two feet, and bears, at the

LISIANTHUS PRINCEPS.

NEW GRENADA.

apex of the branches, subumbellate clusters of flowers. The blooms are tubular, the calyx is about half-an-inch deep, and the corolla from five to six inches in length by an inch in width: this terminates with a spreading limb of fine ovate-acute segments; the tube rich scarlet the greater portion of its length, but melts into golden yellow at each end, whilst the limb is emerald green. Our illustration, which is considerably reduced, gives but a poor idea (in the absence of colour) of the marvellous beauty of this, which the late Dr. Lindley characterised as "one of the noblest plants in existence." It will thrive in the greenhouse or intermediate house. Native of the province of Pamplona, in New Grenada, at 10—11,000 feet altitude.

L. Russellianus.—This fine old plant is a biennial. The seed should be sown early in March, on the top of the soil, and should be covered either with a flat piece of glass or a bell-glass until they germinate. When the plants are about two months old, they should be potted singly, and placed in a genial bottom heat until about the middle of October, when they may be moved into a warm corner of the greenhouse, close to the glass; while here, water must be applied very carefully, a sharp look-out being kept to remove every particle of decaying leaves, as they are very apt to damp off. In spring they should be moved into summer quarters, when they may get a nice bottom heat and be shifted into larger pots; and with this treatment, by about the end of June or beginning of July, the plants will be covered with a profusion of large cup-shaped deep blue flowers. The soil best adapted for them is a mixture of one part light loam, two parts peat, and one part made up of well-decomposed manure and good leaf mould, to which a good portion of sand must be added. *L. Russellianus* is not easily grown into a good specimen, but is one of these plants that will test the care and patience of

the cultivator. All the trouble that can be bestowed upon it will be, however, abundantly repaid by its gorgeous beauty when in flower. Native of Mexico.

Luculia.

A small genus of *Rubiaceæ*, an order which contains many fine plants. An intermediate house suits them best, though they will do well in a conservatory. The soil for potting them in should be fibrous peat and light turfy loam, with a liberal addition of silver sand. They, however, succeed better when planted out against a wall, or treated as conservatory shrubs, than when kept under pot culture, and under these circumstances they form beautiful objects, producing their large heads of very fragrant flowers through the autumn and winter months.

L. gratissima.—This fine plant makes a tree some fifteen or twenty feet in height, but can be kept to almost any size by judicious pruning. The leaves are opposite, large, somewhat ovate-acuminate, slightly downy on the veins beneath, smooth and dark green above; the branches are pubescent. The flowers are produced in large many-flowered terminal cymes, and are pink or rose-coloured, and rather fleshy. The plant when in bloom is a most beautiful object, and the flowers are deliciously sweet. It should be grown in every collection. Native of Nepal.

L. Pinciana.—In general habit this plant resembles *L. gratissima*, and succeeds well under the same treatment. It differs, however, in having the flowers white, instead of rose-coloured.

Macleania.

A genus of *Vacciniaceæ*, nearly allied to *Thibaudia*, and

thriving under the same treatment. Several more are, or were, in cultivation besides those here given, but they are extremely difficult to obtain; we trust, however, to see this class of plants receiving a very large share of attention.

M. pulchra.—A beautiful species with long drooping branches, the leaves oblong, obtuse at the base, slightly pointed, of a deep shining green when mature, but beautifully tinged with red when young. The flowers are large, pendulous, the tubes bright deep scarlet, and the limb yellow; they are produced in clusters upon a short peduncle springing from the axils of the leaves; it blooms during April and May. Native of New Grenada.

M. speciosissima.—This very beautiful shrub is not of compact habit, and should be suspended from the roof or grown upon a shelf, so that its branches may hang downwards. The leaves are from two to three inches long, somewhat oblong, obtuse, three-nerved, dark green, thick and leathery when mature, but, like many of the plants belonging to this order, beautifully tinged with red in a young state. The flowers are upwards of an inch in length, tubular, brilliant scarlet, with yellow points; they are pendulous, and produced very freely in clusters from the axils of the leaves, during the early spring months. Introduced from Columbia.

MANDEVILLA.

There is but one species known at present of this beautiful plant, which belongs to the order *Apocynaceæ*, and was introduced with the popular name of *Chili Jasmine*. The soil best adapted for it is a mixture of equal parts good peat and turfy loam, with a liberal addition of silver sand. As a pot plant this will scarcely give satisfaction to any one, being

extremely difficult to grow into a handsome plant in that way, but, if planted in a well-drained border in the conservatory, it will prove one of the grandest plants than can be grown. After flowering the shoots should be spurred back to within one or two eyes of the old wood. It may be propagated by cuttings or seeds.

M. suaveolens.—This plant is one of the very best climbers for a greenhouse, wherever sufficient room can be spared to allow it to ramble. It is of free, scandent habit, with dark green, opposite, cordate-oblong leaves. The flowers are borne in profusion, and are pure white, and very fragrant. It blooms from June to September, or even the end of October. Native of Buenos Ayres.

Nerine.

An elegant genus belonging to the order *Amaryllidaceæ*, consisting of several bulbous plants well deserving general cultivation on account of the great beauty of their flowers and the peculiar season at which these are produced. They are mostly natives of the Cape of Good Hope; there are, however, a few exceptions. The genus is distinguished by having a six-parted perianth, and no tube, and by some peculiarities in the arrangement in the stamens and filaments. The flowers are borne upon erect scapes, in large umbels, and are produced before the leaves appear.

Nerines are easily grown, and should be potted in a mixture of good sandy loam, to which may be added some well-decomposed cow-manure and good leaf mould.

After the growth is completed water must be entirely withheld, or at least only just sufficient to keep the bulbs plump must be given, until it is desirable to start them into growth; but if they are allowed to come at their natural time, water

must be given as soon as the scapes begin to push up. They may be increased by division of the bulbs, and also by seed.

N. coruscans.—This is a fine species, first introduced in the early part of the century, but much neglected for some years; it is, however, well deserving every attention; the flowers are brilliant scarlet, produced in large umbels, and appear about the end of July and continue in beauty up to the end of August, a time of year when flowers in the conservatory are especially valuable. Native of the Cape of Good Hope.

N. flexuosa.—A very handsome kind, producing its lovely pale rose-coloured umbels of blooms during the winter months. It is a native of the Cape of Good Hope.

N. Fothergilli.—The flowers of this species are produced in large umbels and make a grand show; they are rich vermilion scarlet, and present a beautifully-frosted appearance upon the surface. It blooms during the middle of August and beginning of September.

N. Fothergilli major.—In this variety the trusses and individual flowers are both much larger, whilst their colour is rich bright red spangled with gold. It blooms about the same time.

N. Plantii.—This kind produces large dense umbels of bloom; the individual flowers are large and bright crimson scarlet in colour, having the appearance of being spangled with gold dust. It blooms most profusely during autumn.

N. sarniensis.—This is the well-known and much admired plant, usually denominated the "Guernsey Lily;" and, curiously, it is not a Lily, neither is it a native of the little island in the English Channel bearing that name, but comes to us really from Japan. The umbels of bloom are bright red, and very beautiful. It flowers profusely during the autumn months.

N. undulata.—A spring-flowering species, producing nice

trusses of delicate lilac-rose and pink flowers. Native of China.

N. venusta.—Like the other species, this plant produces its blooms in large umbels, which are brilliant rose-coloured spangled with gold; it is a fine variety, flowering in spring and summer. Native of the Cape of Good Hope.

Nerium.

This very old favourite, commonly called the Oleander, is still amongst the neglected plants, though soon to become again, we trust, a greater favourite than ever. Our continental neighbours thoroughly appreciate its beauty and fragrance. To manage these plants successfully, take them in hand after the flowering season and let them have a short rest; this will be effected by drying. Then cut down to within a few eyes of the previous year's wood, and place them in a warm greenhouse or an intermediate house, and encourage them to make a short growth before winter sets in. In spring the plants should be shifted, using a compost consisting of two parts good loam, two parts well-decomposed manure, one part peat, and one part leaf mould, taking care to stop the young growths so that the plant may make a good bushy head. If it should not be convenient to give them several shifts, they must be fed with liquid manure. One thing more is necessary: *Neriums* are generally seen, when blooming, with as much growth above the flowers as below them; this is caused by neglect. Soon after the trusses of bloom show themselves, young growths start from the base, and if these are allowed to remain, the flowers are robbed of their strength, and we see them nearly buried in foliage; but if they are picked out as soon as seen, the flowers will surmount the

leaves, and form a beautiful compact head. These plants are oftentimes seen much infested with scale, but if our instructions are carried out, with the addition of good drainage, these pests will cause little or no trouble.

Cuttings of these plants strike root with the greatest ease if kept moist.

N. Oleander—The leaves of this beautiful plant are lanceolate, and three in a whorl, bright green, and of a coriaceous texture. The flowers are produced in terminal corymbs, and are large, semi-double, of a bright rosy red, and deliciously sweet. If treated in the manner described above it will make an excellent exhibition plant, and can be had in bloom from June to the end of October. Native of the East Indies, but through having become wild by the sides of streams and various places in the south of Europe, it is often considered a native of Europe.

N. Oleander album.—This differs from the species in having light green leaves and pure white flowers.

Oxylobium.

A genus of Leguminose shrubs, from New Holland, very elegant when in bloom; they should be grown in a mixture of peat and loam, made very sandy. There are many species well deserving cultivation, all being easily managed, and continuing in full beauty a considerable time. They may be increased by inserting cuttings of the young wood in sand, which should be covered with a bell-glass.

O. arborescens.—This species attains the height of three or four feet, and may be grown into a handsome specimen; the leaves are linear-lanceolate; flowers yellow, produced in dense corymbs, and continuing from April to June in great beauty. Native of Tasmania.

O. obtusifolium.—A handsome compact-growing plant, attaining the height of two and three feet, and producing its orange yellow and crimson flowers from March to the end of May. The leaves are oblong, smooth on the upper surface, but very silky beneath, margins revolute; racemes of flower terminal, flowers with the vexillum rich orange colour, yellow at the base, the keel and wings rich crimson. From New Holland.

O. Pultenæa.—The leaves of this fine species are smooth, linear, somewhat obtuse, with the margins rolled back, sometimes disposed in whorls, sometimes alternate; the flowers are rich dark orange, produced in great abundance from March to May. Native of New Holland.

Passiflora.

We have already quoted a few desirable species in the section devoted to stove plants, but as all our readers may not be the fortunate possessors of a stove, we cannot do better than recommend the following kinds to their notice, all of which may be grown in the greenhouse; the soil for potting and the general treatment must be the same as recommended for the stove kinds; they may be readily increased by cuttings of the young wood.

P. cærulea racemosa.—The leaves of this plant vary from three-lobed to five-lobed; they are quite smooth, somewhat thick in texture, and dark green; it is of good robust constitution, and grows rapidly, producing quantities of its fine purple flowers all through the summer season. It is a garden hybrid.

P. Campbellii.—A moderately robust-growing plant, quite suitable for small greenhouses. It is an abundant bloomer,

yielding in profusion its racemes of large rich reddish scarlet flowers; like most of these species and varieties, it thrives best when planted out in the greenhouse or conservatory border.

P. cinnabarina.—This plant is well adapted for amateurs having but a very limited space to indulge their tastes, on account of its moderate style of growth. It is, nevertheless, a profuse bloomer, yielding great quantities of its somewhat small bright cinnabar-red flowers. Garden hybrid.

P. edulis.—This is an old inhabitant of our greenhouses, but, on account of its free habit of growth and abundant blooms, it well merits a place where accommodation for climbers exists; the flowers are white and blue, and sweet-scented; these are succeeded by its elliptic dark purple fruits, which are very ornamental, and which in addition form a nice addition to the dessert. The leaves are three-lobed, smooth, serrated at the edges, and dark green. Native of Brazil.

P. Imperatrice Eugenie.—A fine robust-growing cool house variety, producing its large flowers in great abundance all through the summer months; the petals are rosy-lilac, corona, violet and white. A garden hybrid.

P. Innesi.—This is a superb garden hybrid; it succeeds admirably under greenhouse treatment, and well deserves the attention of all plant-growers; stems and branches quadrangular, smooth, green, tinted with red, and narrowly winged. Leaves broadly ovate, and about six inches long. Flowers large, white, banded with red, and spotted and mottled with violet; it is of such profuse blooming habit that flowers are produced when only about a foot high. The result of a cross between *P. alata* and *P. macrocarpa.* It is an exceedingly handsome addition to our conservatory climbers.

P. Lawsonii.—A very fine garden hybrid; the flowers are

produced in the greatest abundance during the summer months; these are large and reddish brown in colour, affording a pleasing contrast to the last-named variety.

P. Lemichziana.—This is a garden variety produced from the beautiful *P. kermesina*, but it succeeds well in the greenhouse or conservatory; it is a moderately robust-growing plant, producing in abundance its bright crimson scarlet flowers during the summer and autumn months.

P. Munroi.—A superb garden hybrid; it is an abundant bloomer, flowers large, and beautiful light bluish violet in colour.

P. palmata.—A species which has long been cultivated in our gardens, and one which forms a splendid object when trained upon the rafter of greenhouse or conservatory; leaves palmate, five-lobed, with slightly serrated margins; flowers blue shaded with purple, corona variegated with purple, blue, and white. Native of Brazil.

P. sanguinea.—A superb plant, which we anticipate will thrive admirably in the conservatory; leaves heart-shaped and light green; flowers tubular, with a contracted mouth, rich crimson, lake, and white; corona violet tipped with white. It is very distinct from any other species of this genus at present in cultivation, and exceedingly beautiful. Native of Columbia.

PIMELIA.

These plants are easily grown, and are most profuse bloomers, valuable alike for home decoration and exhibition purposes. In the month of March, if the specimens require shifting, they should be looked to; the young plants will be sure to stand in need of repotting. The soil we use for that purpose is about three parts fibrous peat to one part of

good turfy loam, adding about half as much sand as loam. These plants must be watered very carefully after potting, and until the roots have worked into the fresh soil; a moist house with a little warmth just at this time will also be very beneficial; they should not be stopped after about the end of July, as, if done later, it does not allow the plants time to finish their growth and thoroughly ripen their wood. Some few years back very fine specimens were to be seen at our London exhibitions, but for some unexplained reason they have disappeared, but as they are again coming into favour, we hope to see the loss made good. Increase may be effected by either seeds or cuttings; the latter should be from the young wood, inserted in sand and covered with a bell-glass.

P. decussata.—This, as its name implies, has the foliage arranged crossways; the leaves are nearly ovate in shape, dark green above, paler beneath. The flowers are tubular, arranged in compact heads, and reddish pink in colour; it blooms from May to July, and is a most valuable plant for either exhibition or home decoration. Native of New Holland.

P. diosmæfolia.—A species resembling the former, but yet abundantly distinct. The leaves are somewhat broader and rather more lax; the heads of bloom are larger and more spreading, and in colour a soft rose; it blooms during May, June, and July. Native of New Holland.

P. elegans.—This is a stronger grower than the preceding. The leaves are broad, ovate-lanceolate in shape, and about an inch or more long. The heads of flower are globose, and creamy white in colour. A fine species, blooming during April and May. From New Holland.

P. Hendersoni.—A very fine, somewhat slender-growing species, with bright green leaves, and good-sized compact

heads of rosy pink flowers, which are produced in great profusion during May and June. It is a kind very subject to attacks of red spider, which will much disfigure it if strict attention be not given. Native of New Holland.

P. Neippergeana.—A very desirable compact-growing kind, with small close-set leaves, and abundance of pure white heads of bloom, which are produced during May and June. Native of New Holland.

P. spectabilis.—A free-growing species, with light green linear-lanceolate leaves, and large heads of woolly white flowers; in a variety called *rosea*, the flowers are pinkish rose in colour: both are very ornamental, and well deserving a place in every collection; blooming during the months of May and June. Native of New Holland.

Pleroma.

A family of Melastomaceous plants, containing many handsome species, the best of which are here enumerated; they are nearly allied to *Osbeckia*. The soil best adapted for their culture is good fibrous sandy peat, and a small portion of light turfy loam. The greenhouse is far better for them than the stove, but the warmest corner should be selected for them; but if a house with an intermediate temperature can be used, they will form gorgeous specimens. Cuttings of young wood strike freely in gentle heat.

P. elegans.—This is a beautiful ornamental plant, with opposite bright shining green leaves, ovate-acuminate in shape, and producing its large rich blue flowers in great abundance during May and June, and is a plant which no collection should lack. Native of Brazil.

P. sarmentosa.—A beautiful new species, recently intro-

PRIMULA SINENSIS ALBA-PLENA.

GARDEN VARIETY.

duced from Chili. The flowers are upwards of two inches in diameter, and freely produced, in colour deep violet or violet purple, and very handsome. It is of good habit and easy of culture, and will no doubt be a great acquisition to our greenhouses.

PRIMULA.

This is a genus comprising many lovely gems, but as the majority of them are hardy plants, they must be left out of these pages, as we confine ourselves to the greenhouse kinds only; the species and varieties given below are invaluable for the effect they produce as winter and spring-flowering plants. The soil best adapted for these plants is a mixture of about two parts good turfy loam, one part well-decomposed manure, and one part good leaf mould, with a liberal addition of silver sand. Amongst the many varieties of the well-known Chinese *Primula*, several very fine double forms have made their appearance; these are all well deserving special care, although our pages will not allow them all to be enumerated.

P. denticulata.—This very beautiful species has light green spathulate leaves, finely toothed at the edges, and the whole upper surface wrinkled. The flowers are lilac, with a yellow eye, footstalks and calyx covered with a farinose powder, produced in many-flowered umbels upon an upright spike, during winter and early spring, and continue a very long time in great beauty. Native of Northern India.

P. sinensis (varieties).—This species has been lost sight of, and only the superior varieties which have been obtained by careful selection in our gardens are now grown as winter and spring-flowering plants for conservatory decoration; for the drawing-room or dinner-table decoration, these are un-

rivalled. The Chinese *Primula* well merits the title it has obtained of "Everybody's Flower," and is so well known that a description of the plant is almost unnecessary. The leaves are fleshy, with sinuated edges and hairy surface; in the original plant, introduced now nearly fifty years since, the flowers were small, white or pale lilac in colour, and the edges of the limb quite smooth, with a terminal notch in each segment. Another variety with slightly fringed edges was afterwards introduced, and from these, through the efforts of cultivators, have sprung the beautiful forms now to be seen in gardens, and, amongst them all, the varieties which we have had the fortune to produce stand unequalled. Some flowers of these varieties measure two inches and a-half across the limb, the colour a rich clear magenta, and deep orange eye, beautifully fringed at the edges; the white variety is equally large and well fringed, the pure white prettily contrasted with the rich orange-coloured eye, and they have the good property of forming tolerably long flower spikes, so that all the blooms stand well up above the foliage. The fern-leaved varieties are also very handsome, and produce very fine flowers of various shades; and it frequently occurs that some fine double-flowered forms are also produced in this way. There is another variety of this plant called *P. kermesina*, which, on account of its bright rosy carmine flowers, is very desirable. These varieties are obtained from seed every year, and for autumn flowering some seed should be sown in March and April; for later blooming, June and July. The seed should be sown upon some leaf mould and well-decomposed manure, in pots filled to within about half-an-inch of the top; the surface of the soil should be left somewhat rough, and the seed sprinkled upon it, and instead of covering with soil, tie a piece of paper over the pot, and place in gentle heat. The paper only should be watered; this will

ЛМ FLAVUM.

give sufficient moisture, and prevent the seeds being washed away, and will not subject them to the sudden extremes of drought and moisture, which is so fatal to these plants at the time of germination (this being unheeded by many, leads them to condemn the quality of the seeds). In about three weeks the seeds will have germinated, after which the seed pots should be removed to a shady place, and the paper removed, and, when the plants are large enough, potted into separate pots, and gradually subjected to cooler treatment, until they can be placed in a cool frame, close to the glass, during the summer months.

P. sinensis alba plena.—A double white-flowered variety, which, in addition to its beautiful appearance when growing, is invaluable for cutting for bouquets during the winter and spring months.

P. sinensis rosea plena.—In every respect like the preceding, excepting colour, which in this variety is soft rosy purple. The double varieties require similar treatment to the single ones, but, as they can only be increased by cuttings, they are somewhat difficult to propagate.

RHODODENDRON.

This well-known and deservedly popular genus belongs to the *Ericaceæ*. In Asia *Rhododendrons* abound, and a few species are indigenous in Europe, but they are unknown in either Australia or Africa; America possesses very few kinds, whilst in California and Mexico none have ever been discovered. In India many of them are of epiphytal habit, and as they occur at great elevations, some of the species are sufficiently hardy to stand unprotected in many parts of this country. The species and varieties we have selected are well deserving general cultivation; they succeed

admirably in a conservatory or greenhouse, and being very free flowering, and remaining in bloom a long time, they are very ornamental and desirable. Generally speaking, the Indian *Rhododendrons* are amongst the best of cool conservatory shrubs, flowering in such structures if planted out, with a magnificence which is perhaps unequalled. There are many fine species of the Indian *Rhododendrons* not enumerated here, but which are really superb where space can be afforded them.

R. Aucklandi.—The leaves of this species are about nine inches long, somewhat oblong-acute, cordate at the base and leathery in texture, the upper side bright green and the under side slightly glaucous. Flowers from four to five inches in diameter, white, delicately tinged with pink; it blooms during May and June. Native of Sikkim, Himalaya.

R. Brookianum flavum. — A free growing handsome variety of recent introduction. The foliage is somewhat coriaceous in texture, and dark shining green in colour, whilst the flowers are soft clear yellow. It blooms in spring and early summer, and should be grown in the warmest corner of the greenhouse. Native of Borneo.

R. Brookianum gracilis.—This is another of the yellow-flowered varieties of this genus, and very distinct from the preceding. The leaves are pale green; the flowers are large, produced in dense trusses, and delicate light yellow. It is a native of Borneo.

R. ciliatum.—This pretty species is very valuable, on account of its dwarf habit and early-flowering qualities, as with very little warmth it bursts its buds in February, and thus becomes very useful for conservatory decoration. Its leaves are somewhat ovate, bright green above, the mid-rib and margins clothed with stiff hairs, paler and slightly

glaucous below; flowers in clusters of four and five, varying in colour from pale rose to pure white. In its native country the flowers are said to be pale reddish purple. This plant is quite hardy, but on account of its being so useful for early blooming, we have introduced it here. Native of Sikkim, at 9,000 to 10,000 feet elevation.

R. Countess of Haddington.—A superb hybrid, perhaps one of the very finest yet raised. It is of robust habit, with stout, bold, dark green leaves; the flowers are large, delicate blush white in colour, measuring nearly four inches in diameter.

R. Dalhousiæ.—This noble plant is almost always found in its wild state growing upon trees, and its branches hang downwards. The large campanulate flowers measure some four inches in length, and about as much across the mouth; they are produced in large dense heads, and are white, tinged with rose, and delicately scented; it blooms during early spring. Native of Himalaya.

R. Denisoni.—A beautiful hybrid, which we had the pleasure of distributing to the public. It is of dwarf free-flowering habit, with flowers in the way of those of *R. Princess Alice*, but distinguished from that variety by its greater size, and, instead of being pure white, this has a stain of pale yellow at the base of the upper segments, slightly spotted with dark yellow. A garden hybrid.

R. Edgworthii.—The leaves of this species, both young and old, are densely clothed on the under side with soft ferrugineous wool, the upper side being a bright dark green; they are some three or four inches long, ovate-lanceolate, acuminate, and obtuse at the base. Flowers three or four inches across, white, suffused with flesh colour, and remarkably fragrant; it blooms during spring and early summer. Native of Sikkim.

R. fragrantissima.—A garden hybrid of great beauty; the flowers are large, tinged with blush, and in addition are deliciously sweet. It is one of the best for greenhouse and conservatory decoration.

R. Gibsonii.—This is an introduced species from Sikkim. It is of branching habit, with small foliage, and may easily be grown into a good and handsome specimen. The flowers are large, white, faintly tinged with blush. It blooms in May.

R. Henryanum.—This plant is the result of a cross between *R. Dalhousianum* and *R. Sesterianum*, and is without doubt a valuable addition to this exceedingly ornamental genus. The flowers are large, of good shape, pure white, and deliciously sweet.

R. jasminiflorum.—This very beautiful species should be in every collection. The leaves are obovate-oblong, rather acute, smooth, and leathery in texture. The flowers are produced in a many-flowered umbel, tubular in shape, the tube two inches long, the limb spreading, pure white, with the exception of the eye, which is pink; they are also deliciously fragrant; it blooms in spring and early summer. Native of Malacca, at an elevation of 5,000 feet.

R. javanicum.—A fine species, of which, however, there are several forms in cultivation; the habit is good, although the plants are somewhat slow in growth. Foliage medium size, dark green. Flowers large and rich, deep orange in one variety, whilst another form produces blooms of a somewhat lighter shade of the same colour. It blooms in the month of May. Native of the mountains of Java.

R. Jenkinsii.—A superb species forming a compact evergreen shrub; leaves oblong, lanceolate, coriaceous in texture, and dark green. Flowers large, funnel-shaped, and pure white. It is a very beautiful species, well deserving attention.

R. Lobbii.—A superb species, which, however, requires a somewhat warm greenhouse to display its beauty. It produces its blooms in good-sized trusses most profusely; the flowers individually are tubular, about four inches long, and rich shining crimson in colour. This is a great acquisition to growers of greenhouse Rhododendrons, being, perhaps, the most highly-coloured species of the whole race at present in cultivation. Native of Borneo.

R. McNabbii.—This is a fine variety, the habit being dwarf and compact, and it produces its large blush white flowers in the greatest abundance. Of garden origin.

R. Nuttalli.—This fine plant, although it blooms freely before attaining its full size, does attain a height of something like thirty feet; it produces immense trusses of large funnel-shaped flowers of the purest white; they are, however, beautifully relieved by a tinge of pale gold in the throat, whilst on the outside they are delicately suffused with rose. It blooms in the months of May and June. Native of Bootan.

R. Prince of Wales.—A beautiful hybrid, the result of a cross between *R. javanicum* and *R. retusum*, from the Java Mountains; it has the rich bright orange colour of the first-named plant, but is longer in the tube, like its other parent; the leaves are bright glaucous green. A very ornamental greenhouse plant.

R. Princess Alexandra.—This is a very free-blooming, highly ornamental conservatory variety; it resembles in habit the well-known *R. jasminiflorum*; the tube of the flower is long and pure white, and the stamens are light rose colour. A garden hybrid.

R. Princess Royal.—A lovely ornamental variety for the conservatory. It is of very distinct character, producing an abundance of its rich deep rose-coloured flowers. A garden variety.

R. Princess Helena.—A beautiful hybrid, with rich glossy green leaves. The flowers are produced very freely, are very long in the tube, and very glossy, in colour a delicate soft pink, striped and shaded with darker pink. It is a valuable greenhouse plant, the result of a cross between *R. ciliatum* and *R. Edgworthii*. Garden hybrid.

R. Princess Alice.—Flowers large, white, shading to blush, and very fragrant; it is of dwarf habit, with neat foliage, and is a very free bloomer. A garden hybrid.

R. Princess Mary.—An exceedingly beautiful garden hybrid; the flowers are pure white, tinted on the outside with rosy pink, rendering it very attractive and ornamental.

R. Sesterianum.—A hybrid between *R. Gibsoni* and *R. Edgworthii*. Flowers large, pure white, spotted with yellow on the upper petals; it is deliciously sweet, and a very free bloomer.

R. Thibaudiense.—This is a very peculiar and pretty species, the flowers very much resembling those of its near ally the *Ericas;* they are produced in terminal trusses, beautiful bright red, saving the ends of the tubes, which are greenish yellow. Native of Bootan.

R. tubiflorum.—This is at once a novel and beautiful species; the leaves are somewhat oblong-acuminate, about three inches long by one in breadth; in a young state they are of a rich bronzy gold, changing with age to dark green; the flowers are tubular and dark red shaded with purple. From the mountains of Java.

R. Veitchianum.—This is a very handsome Moulmein species; the flowers are large, pure white, stained with yellow at the base, and beautifully crisp at the margins.

R. Veitchianum lævigatum.—A large pure white flower, resembling the former, but is destitute of the fringed edges. It is also of Indian origin, having been imported from Moulmein.

RHODODENDRON

R. virgatum hybridum.—A garden hybrid of great beauty, forming a compact and handsome shrub; the flowers are produced in large trusses, and snowy white.

R. virginalis.—Flowers very large, and of the purest white, which renders it very attractive. It is a compact handsome growing variety, the dark green of its foliage contrasting beautifully with the snowy whiteness of its blooms. A garden hybrid.

ROELLA.

A genus of *Campanulaceæ*, from the Cape of Good Hope, many of the species very beautiful, the one here described being not the least important in that respect, although, like many other fine plants, it is difficult to manage. The soil should be the best peat that can be obtained, adding silver sand in the proportion of about a third of the whole, together with some pieces of charcoal, which will be found very beneficial. If the plant shows any signs of starting into fresh growth, the potting may be done early in spring, after which it should be stood in a light place, with a temperature of about 60° by day, and, of course, some five or six degrees lower at night. Great care must at all times be taken that the plants are not over-watered. As the season advances, the growths should be gently syringed on bright mornings, when the sun's rays will dry up all the superabundant moisture; and air must be freely given, to encourage free strong growth. Do not encourage them to grow late into the autumn, but get the wood well ripened to enable them to winter well. If the plants are intended for spring blooming, they should not have the young growths stopped after June. In winter, place them as near the glass as possible, and keep up a temperature of from 40° to 45° with a dry atmosphere, being careful not to allow any moisture to remain upon the foliage, or mildew

will be sure to fix upon it, and disfigure the plant. Cuttings of the young wood root freely, and they may also be increased from seeds.

R. ciliata.—This very elegant, though delicate plant, forms a shrub from one to two feet high, or even more; the leaves are erect, linear-acuminate, and ciliated. The flowers are solitary and terminal, campanulate in shape, white to the base of the lobes, above which they are violet purple; it can be had in bloom either in autumn or spring. Native of the Cape of Good Hope.

Rogiera.

A genus of *Rubiaceæ*, nearly allied to *Rondeletia*, and, like these and the *Ixoras*, producing their flowers in large terminal heads or trusses. These plants should be grown in a mixture composed of rough fibrous peat, leaf mould, and a little loam, with some silver sand added. Increase by cuttings, which root freely when placed under a bell-glass, in gentle bottom heat.

R. gratissima.—This is a beautiful plant, somewhat resembling a Laurestine in appearance, and, like it, producing its flowers in large terminal heads or trusses. It is a native of Las Chiapas, and, having been found at an elevation of 7,500 feet, is admirably adapted for greenhouse and conservatory decoration. It is also well adapted for cutting for bouquet-making. The flowers are deliciously sweet, and can be had at various times, during both summer and winter, as they are produced shortly after the growths are completed, and these are formed in succession several times in a season. The leaves opposite, thick in texture, and rich dark green; the flowers are produced in large terminal corymbs, are of a delicate pink colour, and very fragrant. It is an abundant

bloomer, and when young should have its trusses of flowers pinched out as soon as they appear, in order to encourage growth.

Salvia.

This genus contains many species, and is of wide geographical range, many kinds being extremely ornamental in the open border and perfectly hardy; we shall, however, only enumerate two species, which are extremely useful and showy for greenhouse or conservatory decoration. The soil for these plants should be two parts rich loam, one of peat, and one of leaf mould, to which a little sand may be added. They may be increased most readily either from cuttings or seeds.

S. gesneriflora.—This soft-wooded Labiate is one of the finest things for conservatory decoration it is possible to grow. It forms a fine bushy plant, from two to three feet high, well clothed with rich bright green leaves, and produces an abundance of its deep scarlet flowers through the whole winter and far into spring; nor does it become shabby, but continues in great beauty the whole time. Native of Columbia.

S. splendens.—This is one of the best old-fashioned greenhouse flowering plants. It is of free growth, with ample smooth pale green foliage, and when well grown will produce an abundance of its fine scarlet flowers during the autumn and winter months. It is also well adapted for growing as standards for table decoration, &c. Native of Mexico.

Solanum.

This genus contains an immense number of species, many of which are of great importance for the decoration of the

garden. Some make splendid objects for planting out-doors, for diversity in the sub-tropical garden; others are equally valuable for conservatory and dinner-table decoration; it is to the latter class that we shall confine our remarks in this place. They are plants of very easy culture, and for table decoration should be grown every year from seed.

S. capsicastrum (hybrids).—The varieties we recommend are those known in commerce as Williams' Hybrids, as being far superior to the forms from which they have sprung, especially the form known as *S. hybridum compactum*, of which our illustration gives but a faint idea. There are many variations in shape and size of berries, but all are robust, yet compact in growth, and most profuse fruiters, and as they have a fine effect by artifical light, they are especially useful and ornamental for table decoration.

Sollya.

A genus of very pretty half-climbing evergreen shrubs, which are well deserving a place in every collection, for although they cannot take rank amongst the most showy, yet the beautiful contrast afforded by their pretty blue flowers and dark green foliage will make them universal favourites. The soil best adapted for their culture is good peat and a little turfy loam, adding about one-fourth silver sand. Increased by cuttings, inserted in sand and placed under a bell-glass.

S. Drummondii.—A neat-growing species, having slender growth, and a profusion of bright deep blue flowers. It is well adapted for covering miniature trellis-work, suspending in baskets, &c. From Australia.

S. heterophylla.—A free-growing species, with broad leaves,

SOLANUM HYBRIDUM COMPACTUM.

GARDEN VARIETY.

variously arranged, and large clusters of drooping bright blue flowers. From Australia.

S. linearis.—A free-growing plant, of more slender habit than the preceding, and with narrower leaves and deeper blue flowers. Native of Australia.

STATICE.

An extensive genus, consisting of plants which, when seen, are sure to be admired. They are, however, much neglected, and seldom have proper attention bestowed upon them. They are of compact habit, and very free in flowering, some of the kinds continuing from June to November in full beauty, and making, as they do, beautiful objects for dinner-table decoration, they are plants that should be general favourites. Their natural habitat is near the sea coast, the Canaries being particularly rich in these plants. The soil best adapted for them is a compost composed of a mixture of light loam, to which add a little leaf mould and well-decomposed manure, and a liberal share of sharp sand. To make specimen plants quickly they should be grown in a temperature of about 60° or 65°.

S. brassicæfolia.—A pretty species, for summer and autumn flowering; leaves hairy, subpinnate, large, deep green; flower stem nearly two feet high, broadly winged, and bearing a large corymbose head of flowers, which are white, with a large deep blue calyx. Native of Gomora, Canaries.

S. Halfordii.—This is one of the finest varieties for exhibition and general purposes, having large entire cordate leaves, and immense large branching flower spikes, the corolla white, with a blue calyx. A garden hybrid.

S. profusa.—This handsome plant is a hybrid between *S. puberula* and *S. Halfordii.* The leaves are somewhat

oblong-obovate, slightly sinuate, and a little rough; scape narrowly winged, about two feet high, and corymbosely branched. The plant is less robust in growth than *S. Halfordii*, and is an invaluable plant for winter blooming, the dense heads of flowers—which are, like most of its class, purple in the calyx, and white in the corolla—being continually thrown up from the axils of the leaves, so that it is almost a perpetual flowerer.

Tacsonia.

A genus of *Passifloraceæ*, closely resembling Passion Flowers. As greenhouse climbers the species given below are unequalled. Pot in a compost of peat and loam in equal parts, to which add a little well-decayed leaf mould or manure, and some silver sand. These plants are freely increased by cuttings of the young shoots, and also by seeds.

T. Buchanani.—A species of quite recent introduction from Panama, which will perhaps prove to be sufficiently hardy for the greenhouse. It is a climbing plant, with five-lobed unequally-toothed leaves, and large showy bright scarlet flowers. This is more correctly called *Passiflora vitifolia.*

T. eriantha.—A grand plant, in general appearance resembling *T. mollissima*, but having the under surface of the leaves white; they are about six inches in diameter, deeply three-lobed, the lobes toothed. The tube of the flower is about three inches or three inches and a-half long, and the flowers upwards of three inches in diameter, and of a beautiful delicate rose pink colour. It comes from the forests near the Volcano of Pichincha, in South America.

T. exoniensis.—This is a very beautiful hybrid, produced between *T. Van Volxemi* and *T. mollissima*, and combines the character of both species; the tube is nearly three inches long,

and the petals are soft light magenta, stained purplish at the base, which forms a circle of that colour round the throat. It is a garden hybrid, of recent introduction to our collections.

T. mollissima.—This is a very strong-growing climber, not very free-flowering until it has attained a considerable size, but then blooming most profusely. The leaves are three-lobed, and sharp toothed, slightly hairy on the upper surface, tomentose below. The flowers are large, and of a beautiful soft rose colour. Native of Santa Fe de Bogota.

T. Van Volxemi.—The most lovely species in cultivation—indeed, it is almost unequalled as a greenhouse climber. The leaves are slightly pubescent, deeply three-lobed, lobes lanceolate, acuminate, and serrulate. The flowers, which are most freely produced, measure five inches in diameter, the colour being a rich bright carmine crimson; suspended as they are on long alender footstalks, they have a splendid effect. Native of New Grenada.

TETRATHECA.

Handsome Heath-like plants, which will succeed under the same treatment as Heaths, except that a little loam should be added to the soil. They belong to the order *Tremandraceæ*, make handsome specimens, and can be used for show purposes, as they bloom at the right time, and do not suffer by the transit to and from the place of exhibition. They are shrubby plants of great beauty, and should be more generally grown; cuttings of the young wood root freely in an ordinary propagating house or pit.

T. ericoides.—The leaves of this elegant plant are dark green in colour, arranged in whorls of five or six, of a linear form, the margins rough, and rolled back. The flowers are

obovate, rosy lilac; it grows from one to three feet in height, and blooms from May to July. Native of New Holland.

T. pilosa.—A free-flowering species, the leaves of which are green, but so much covered with hairs that they appear of a brownish colour; they are oblong-linear, alternate or sometimes in whorls, the margins rolled back, and, as well as the branches, covered with glandular hairs. The flowers are solitary in the axils, purple, and produced in great profusion from April to June. Native of Tasmania.

T. verticillata.—A handsome and distinct species. The leaves are slightly hairy, linear, with revolute margins, dark green, and disposed in whorls of from seven to nine. The flowers are large, freely produced upon long footstalks during the summer months, and deep violet in colour. It requires to be frequently cut back in order to make a good specimen; if this operation is neglected, the plant becomes lanky and unsightly. Native of New Holland.

Thibaudia.

A genus of showy and ornamental plants, well deserving the care and attention of all plant cultivators. In a warm greenhouse, these plants, with a little care, form most gorgeous objects, well repaying the extra care and trouble bestowed upon them, and we hope to see the various members of this genus become general favourites. The soil best adapted for them is a mixture of sandy peat and fibrous loam, with a moist atmosphere. Increase may easily be effected by inserting the cuttings of half-ripened wood, having a heel, into very sandy soil.

T. acuminata.—This beautiful greenhouse shrub well deserves the attention of all plant-growers, forming as it does

such a beautiful object, and blooming so many months in succession; leaves when young tinged with purple, changing with age to dark green; flowers tubular, with a fine lobed limb, and brilliant red in colour. It blooms during winter and spring. Native of the Andes of Ecuador, at 8,000 ft. or 10,000 ft. elevation.

T. coronaria.—An erect-growing branching plant, of great beauty. The branches are covered with long soft hairs; the leaves are entire, bluntly ovate, about half-an-inch long, very deep glossy green, the lower surface pale. Flowers pendulous, on peduncles half-an-inch long, produced from the axils of the leaves mostly in pairs, and tubular in shape, bluntly five-angled, and about an inch in length, and deep red in colour; it is a most desirable plant, blooming during the winter months. Introduced from the mountains of Venezuela.

T. Jessica.—Another of these beautiful Vacciniaceous plants, forming a nice shrub, with leaves between six and ten inches long, membranous, and rich green. The flowers are tubular, with the tubes somewhat inflated, and bright rosy pink, produced in great abundance, in clusters of eight or ten; it flowers at various times. Native of Caraccas.

T. longicolla.—Leaves oblong-ovate, leathery in texture, from three to four inches in length, and bright shining green in colour. The flowers are tubular, with the tubes inflated at the middle, where they are deep red, the remaining portion of the flowers being green, tinged with yellow. From South America.

T. sarcantha.—This beautiful species has somewhat fleshy coriaceous alternate leaves, which are ovate-oblong and sharp-pointed, dark green above, paler below. The flowers are campanulate in shape, rich deep red in colour, yellowish green towards the ends, and produced in large terminal clusters

as well as from the axils; it blooms during the spring months. Native of New Grenada.

Tropæolum.

A handsome family of plants, which were at one time to be seen in every collection, but have now almost disappeared from our plant houses. They are very easily managed, take up but little room, have very distinct and gay flowers, last for a considerable time in bloom, may be used as decorative plants, and are very useful for cutting for bouquets. What other requisites can a plant require to recommend it to public notice? The species given below are all tuberous-rooted. They begin to grow about the beginning of September, and should be put into the pots they are intended to flower in; using a mixture of half good light loam, and the other half to consist of peat, leaf mould, and well-decomposed manure, with the addition of a little sand. A wire trellis of some kind should be fastened upon the pot for the branches to cling to. Young plants, intended for the decoration of the dwelling-room, make very pretty objects when allowed to ramble over a good-sized spray of Larch. As they increase in strength a little weak liquid manure will be very beneficial, and during winter the warm end of the greenhouse is the place that will suit them admirably. So treated, they will during the months of April and May be in great beauty. After flowering more heat should be given, to induce them to finish their growth, and as they reach maturity less water must be given. When they are at rest the pots may be turned upon their sides, and the soil kept quite dry until it is required to start the plants again in autumn.

T. azureum.—A scandent tuberous-rooted plant. The leaves are peltate, and divided into from five to seven ovate,

entire, and dark green segments. The flowers are produced singly from the axils in great profusion, of a violet blue colour. Native of Chili.

T. brachyceras.—A similar plant to the other species, with tuberous roots; leaves divided into five ovate-lanceolate deep green leaflets. The flowers are yellow. Native of Chili.

T. Jarrattii.—This is a very fine species; like the preceding it is tuberous-rooted, of climbing habit, with dark green leaves. The flowers are rich scarlet and yellow, and are produced from the leaf axils in abundance. Native of Chili, about Santiago.

T. speciosum.—One of the finest of all the species. It is tuberous-rooted; well-divided leaves, and rich scarlet flowers, remarkable for the singular shape of the expanded petals. Native of South America.

T. tricolorum.—This has also tuberous roots, and is of scandent habit; leaves divided into six or seven obovate leaflets, of a dark green colour. It produces its beautiful flowers, which are orange scarlet and yellow, tipped with black, in great profusion. Native of Chili, about Coquimbo and Valparaiso.

VALLOTA.

V. purpurea.—This beautiful Cape bulbous plant, which should be in every collection, is with difficulty surpassed during the autumn months by any other plant, either for greenhouse or sitting-room decoration, and is equally well adapted for the dinner-table. It is an evergreen bulb, and consequently does not require, neither will it bear, to be dried off without serious consequences. The soil best adapted for its culture is equal parts good loam, peat, well-decomposed

manure, and river sand. We repot them as soon as the flowers are over, and keep them growing through the winter, giving water sparingly, and increasing the supply as the days lengthen. In summer they will grow well in a cold pit, but must have an abundant supply of water. About the middle of August they will throw up their flower stems, and if a stock of them is kept, their beautiful scarlet flowers can be had in succession for several months. It is a native of the Cape of Good Hope.

VERONICA.

A genus containing many pretty greenhouse shrubs, of compact growth and hardy constitution. They should be potted in a compost consisting of three parts good rich loam, with a little peat and sand added. They produce their flowers during summer and autumn, and are useful for decoration. They are easily increased by cuttings of the half-ripened wood, and also by seeds, when these are obtainable. Subjoined are a few good varieties.

V. Andersoni.—A fine ornamental kind, with rich dark green leaves, and large spikes of pretty lilac flowers, which change with age to white.

V. decussata Devoniana.—This is a fine variety, of close compact habit; the leaves are larger than those of the species, and of a rich dark green. The flowers are freely produced in large terminal heads, and are pure white. A garden hybrid.

V. Imperial Blue.—A variety of free-flowering habit, producing fine trusses of rich deep blue flowers.

V. Meldensis.—A plant which contrasts well when grouped with others; it is a profuse bloomer, producing large spikes

of bright rose-coloured flowers, which change with age to white. A garden variety.

V. speciosa coccinea.—This is a very robust-growing variety, with ample broad green leaves; the flowers are red, but unfortunately it does not flower so freely as the other kinds. A garden variety.

WITSENIA.

A genus of handsome plants belonging to *Iridaceæ*, from the Cape of Good Hope. The species here described is often neglected in gardens, and consequently seldom displays itself to advantage, but when well grown it is a charming plant. The soil should consist of good peat, with a small portion of loam added. They are plants which require an abundance of water, and good drainage. These plants are increased by offsets, cuttings, and also by seeds when obtainable.

W. corymbosa.—The leaves of this plant are *Iris*-like, and equitant, very glaucous. The flowers are light blue, and freely produced if the plant is in good health. It flowers during June and July, and is well deserving every attention, on account of its gay appearance and distinct character.

FLORISTS' FLOWERS, ANNUALS,

AND

SOFT-WOODED PLANTS,

ADAPTED FOR

CONSERVATORY AND GREENHOUSE DECORATION.

WE have deemed it more for the convenience of our readers to collect together in one chapter what remarks we have to offer on the subjects indicated by the above heading. In most of them the varieties produced by cross-breeding and hybridising are so numerous, and the differences are in many instances so very trifling, as scarcely to be expressed in words, added to which, the varieties themselves are so continually changing and giving place in most cases to improved forms, that it would be practically useless to attempt their description. Still they are of so popular a character, and so highly useful and ornamental as inexpensive decorative plants, that our volume would be very incomplete without them. Hence we have given, under the following generic headings, such hints regarding the cultivation of the subjects we have thought it most important to allude to, referring our readers to the annual trade catalogues for lists of the best current varieties.

Aloysia.

The lemon-scented Verbena, *A. citriodora*, an old inhabitant of our gardens, belongs to the *Verbenaceæ*, and is a very popular plant, being grown for its grateful perfume. It is very useful for bouquets, and to mix with cut flowers for dressing vases, &c. It delights in rich loam and leaf mould; and as the shoots are continually being cut, it is not so apt as many other plants to grow too vigorously. It is a deciduous plant, and should be kept partially dry during winter. The flowers are small, of a very pale purple colour. The plant is a native of Chili.

Balsam (*Balsamina hortensis*).

The Balsam is one of the class of tender annuals, and, when of a good strain, is amongst the most showy of late summer and autumn flowers. The soil best adapted for their culture is a mixture of rich loam and leaf mould, with a portion of sharp sand added. If required early, the seeds should be sown in March, and the plants raised in a moist heat; and, for a succession, another sowing should be made in April or May. When two or three inches high pot the plants separately, and continue shifting them as they fill the pots with roots. They answer best grown in pits or frames with a moderate heat, as they can be kept close to the glass and be prevented from drawing up. As summer advances more air must be given, and the syringe must be freely used to keep away red spider. An application of weak liquid manure about twice a-week during the growing season will also be of great advantage. The splendid double flowers of the fine strain of *B. hortensis* supersede for decorative purposes all other members of the genus, and as they remain in

full beauty a considerable time, they well repay any attention bestowed upon them. The plant is a native of the East Indies.

CALCEOLARIA.

This genus, called Slipperwort, belongs to the *Scrophulariaceæ*, and may be divided into two sections—the Herbaceous or Florists' Flowers, and Shrubby or Bedding kinds. Seeds of the Herbaceous kinds should be sown in July and August, in pans well drained and nearly filled with rough turfy loam, making up the surface with fine sifted mould and silver sand. Water the soil with a fine rose, and immediately sow the seed, no covering of earth being required. Place the pans under a hand-glass or in a cold frame, and carefully exclude them from exposure to the sun. When the seedlings are strong enough, prick them off into pans, and place them in a close situation. When large enough pot off singly, and put them upon a shelf near the glass in an airy greenhouse. Raising plants from seed every year is far preferable to increasing the stock by cuttings. It was quite necessary to resort to that practice some years ago; but the race of Herbaceous Calceolarias we now have in cultivation is so very fine, that it is labour wasted to trouble with cuttings, as the great majority of the plants from a batch of seed will prove all that can be desired. The soil for growing them should be composed of three parts rich light loam and sand, about two parts good leaf mould, and the remainder well-decayed sheep manure. When well grown they are very ornamental, and serve to decorate the greenhouse and conservatory just at the season the hard-wooded plants are failing; consequently they are of double value. They are subject to attacks of green fly, which must be destroyed by fumigation

as soon as it appears; and if the plants are kept in a dry atmosphere at a high temperature, red spider and brown spot will disfigure them very rapidly: therefore care must be taken to keep them in a cool, moist, airy situation.

The Shrubby kinds are more compact and hardy, and although they are serviceable to some extent for in-door decoration, their chief use is for bedding purposes. They are mostly raised from cuttings. Nothing can be easier to cultivate if the side shoots are planted in a cold frame, or even out of doors, about October, when nearly every cutting would grow; but at any other season they are somewhat difficult. Calceolarias are natives of South America, mostly at considerable elevations in Chili and Peru. Yellow of various shades is the prevailing colour amongst the species; one or two pale purple-flowered kinds are also found, which may probably lead to further improvement in this genus. Amongst the hybrids we have spotted flowers in almost all shades of colour—rich dark brown, as well as crimson and mauve. They do not grow well when forced, but, as they will stand a few degrees of frost uninjured, they continue to keep the flower garden gay till quite late in the autumn.

CHRYSANTHEMUM.

This is a very large genus of *Asteraceæ* (*Compositæ*), composed of many annuals, nearly all of which are hardy plants; but we have in this place to deal with the varieties of *C. sinense*, which have been so vastly improved by cross-breeding, and by the attention of the Florist, that they are absolutely indispensable for autumn and winter decoration. The plants are perfectly hardy, but as the flowers cannot withstand frost, it is only in very favourable seasons

that they will remain long in perfection as border plants; they are consequently and deservedly largely grown in pots for conservatory and greenhouse decoration. Two distinct classes of this flower have been grown with us for a long time, viz., the Large-flowered or Show kinds, and the Small-flowered or Pompons. To these, through the researches of our countrymen in Japan, has been added another class, which has been designated the Japanese Chrysanthemum; and although they do not yet reach the standard set up by our Florists, they are very handsome, and will no doubt lead to some good results by cross-breeding, in producing new colours or shapes.

Chrysanthemums are increased by cuttings, which should be taken off and inserted in small pots about the middle of February, and placed in a moderate heat. Directly they are nicely rooted, pot them off separately, and do not allow the roots to be cramped at any time during the growing season. About the middle of April, plants intended to bloom in pots should have a large shift; the soil for this purpose should be composed of good turfy loam and well-decomposed manure in about equal parts, to which may be added a little peat and some river sand. This mixture will grow good strong specimens, if attention is paid to stopping the shoots and tying out the branches; and in particular, care must be taken never to allow the plants to flag, or else the loss of the bottom leaves is sure to follow; therefore give them an abundance of water, with the addition of some liquid manure about once a week during the growing season. The final shift should be given about the first week in June, after which time the points of the shoots should not be pinched. During the whole of the summer they should stand in the open air, giving them watering overhead in the evening after sunset during the hot weather, but discon-

tinuing it as autumn advances. As the buds begin to show themselves they should be thinned. If a few fine flowers only are wanted, take all the others away; but this must be regulated according to what is required of them. When the blooms begin to open they should be removed in-doors; and after their beauties are over, they should be cut down and just preserved from frost, to enable them to make young growths for cuttings in the following February. The most usual form these plants are grown in is that of broad bushy shrubs. In addition to this, some few should be trained to a single stem, and then made to form a head. These standards, if neatly formed, make very ornamental and pleasing objects distributed amongst other plants. Small plants for table decoration are also procured by layering the points of old plants in the open ground, into pots of the required size, just after the flower buds are formed; these quickly root, and may soon be removed from the parent; they form pretty little dwarf plants for standing in small vases, or any such-like places. *C. sinense*, from which all our cultivated varieties have sprung, is a native of China.

CINERARIA.

This is a genus of *Asteraceæ*, which comprises Stove, Greenhouse, and hardy species. With none of these, however, shall we deal in this place, but shall confine our remarks to those varieties grown as Florists' Flowers, the origin of which is very doubtful. Like the Calceolaria, many varieties are named, and are perpetuated by cuttings; but as a batch of seedlings from a good strain will produce almost every shade of colour, the amateur could employ the extra care and attention which cuttings require with greater

advantage. Cinerarias require a good rich soil to grow them well; we have found that a compost of turfy loam, fibrous peat, good leaf mould, and well-decomposed manure, in about equal parts, will suit them well, if a moderate share of sharp sand be added to the whole. The same treatment as that recommended for sowing Calceolarias will answer in this case; but where plants are required for winter flowering, the seed must be sown in April or the beginning of May, and if for spring blooming, in July and August. The Cineraria succeeds best when grown in a frame or pit, even in cold weather, of course excluding frost from them. They are fast-rooting plants, and should never be allowed to suffer from want of room; for if such is the case the foliage will be small and deformed, and the trusses of bloom thin and poor. The green fly is a great enemy to the well-doing of these plants; it must be kept down by frequent light fumigations, for on no account may Cinerarias be subjected to a heavy smoking, or the remedy will prove as bad as the disease.

Cockscomb (*Celosia cristata*).

This favourite old annual has been somewhat neglected; but, like many other such things, it is now again asserting its right to public notice. Several other kinds introduced from the Japanese gardens are very handsome, although not producing a large Cockscomb-like inflorescense as *C. cristata* does; we allude to *C. aurea pyramidalis* and its varieties, which are very useful for bouquet-making, and form splendid plants for the decoration of the dinner-table. These can be either grown from seeds or from cuttings. Seeds of the ordinary Cockscomb should be sown in pots or pans in March or April, and placed in a hot-bed. When they have made

four or five leaves, pot them off singly into small pots, and replace them near the glass, and keep them somewhat starved in respect to water, which will have the effect of throwing them into flower. When the comb shows itself, pot the plants on into good-sized pots, in a compost consisting of rich sandy loam and good manure in equal parts; stand them close to the glass, but just so that the tops do not touch it, and treat them to liberal supplies of water. In this way, very large rich dark red combs are produced upon very dwarf plants; but if taller plants are required, they should receive generous treatment from the time they first germinate: still, these will not be considered so fine as the dwarf plants. The species is a native of Asia.

The general treatment of *C. aurea pyramidalis* is of a similar character, except in so far as regards the starving and dwarfing processes. Well grown, they form splendid tall pyramidal bushes, with a more or less feathery inflorescence of various shades of orange and red, and are most useful in the conservatory during the autumnal season.

Deutzia.

This is a genus of dwarf-growing hardy shrubs, nearly allied to *Philadelphus*, producing white and pink flowers; and only introduced into this place on account of their value, when forced, as early-flowering plants for the conservatory and greenhouse. They should be grown in a mixture of peat, loam, and leaf mould, the weak straggling wood being cut out, so as to conduce to their forming long stout rods, upon which they will bloom most profusely when brought into the forcing house in winter. The single-flowered species are best adapted for this purpose. They are natives of the East Indies and Japan.

Dianthus.

Under this head we refer more particularly to the varieties of *Dianthus caryophyllus*, which are commonly called Perpetual or Tree Carnations—plants which are admirably adapted for early forcing. They are such abundant bloomers, that they should be grown by every one who wishes for a good display of flowers early in the season. They are increased by pipings, which is only another term for cuttings. The pots for their reception should be prepared in the same way as for other cuttings; the shoot should be cut through clean at a joint and slit. When the pot is full, stand it upon a gentle hotbed, well shaded from the sun, until rooted, when they may be potted singly and grown for one season without being allowed to flower. At the end of December or the beginning of January, the plants, which will be set with buds in autumn, will be in full beauty, continuing to give a succession of their beautiful flowers during the whole winter; and in the spring, if planted out of doors, they will yield an abundance of fine flowers for cutting, and produce fine growths for pipings. The soil to grow these plants in successfully is rich turfy loam, well-decomposed cows' or sheep's manure, good leaf mould, and sharp sand, in about the proportions of three parts of the first to one of each of the latter; let it be frequently turned before using to ensure its thorough mixing, and in order that any wireworms which may be in it may be discovered and destroyed, for the wireworm is the deadly enemy of this family. Green fly also attacks these plants, but it can easily be destroyed by slightly fumigating.

Dielytra.

A genus of hardy herbaceous perennials, belonging to

Fumariaceæ, and nearly allied to *Corydalis*. We have introduced it in this place to include *D. spectabilis* and its white-flowered variety *flore albo*. These, on account of the ease with which they may be forced for the decoration of the greenhouse during the winter months, and from the beauty and distinct character of the flowers, should be used by every one. They are tuberous-rooted plants, succeeding admirably in rich turfy loam and sand. After blooming, they grow best if planted in the open border in the soil recommended, and after the stems have decayed in autumn they should be again taken up and potted, to be brought into the forcing-house as may be required. The species is a native of China.

ECHEVERIA.

A genus of *Crassulaceæ*, the species of which have thick fleshy leaves, often arranged in a rosulate manner, and in many of the species variously tinted or powdered; they produce spikes of scarlet, yellow, pink, crimson, and orange-coloured flowers, and many of them can be made to produce these through the months of February and March, when they are valuable acquisitions. This has induced us to introduce them here. Echeverias should be grown in a mixture of sandy loam and old brick rubbish broken small, with a little peat added; they are increased by seed, and by making cuttings of the leaves, which should have the base dried before being put in the cutting-pot. The majority of the species are natives of Mexico.

EGG PLANT (*Solanum ovigerum*).

This species of *Solanum* is an annual, and is grown for its

singular and very ornamental fruits, which resemble, both in size, colour, and shape, the eggs of the inhabitants of our poultry-yards. The seeds should be sown in March, and placed in the stove or a gentle hot-bed; when the seedlings are large enough to handle, pot them singly, using a mixture of peat, loam, and thoroughly decomposed manure, in about equal parts; keep them growing in heat and close to the glass, shifting into larger-sized pots as the old ones fill with roots, and give occasional waterings with liquid manure. After the fruit is set, they may be removed into the greenhouse and conservatory, where their singular fruits will be very attractive and interesting. There are purple, black, yellow, and red varieties of this plant. Native of Arabia.

Fuchsia.

The grace and elegance of the flowers of the species and varieties of this genus are well known to every one. The improvements which have been brought about by cross-breeding, both in regard to the size and form of the flowers, is really wonderful. The soil best suited for the culture of these plants is a mixture of half good yellow loam, the other half well-decomposed manure and good leaf mould, to which may be added a portion of silver or sharp river sand. Fuchsias may be propagated by seed or cuttings; the former will give fresh varieties, but the latter is the system which all growers adopt to maintain their stock, either for home decoration or public exhibition. The cuttings should be taken off about the beginning of March (from old plants which have been placed in heat to induce them to push out young wood), and placed in the properly-prepared pots in a gentle hot-bed. When rooted, which they very quickly

will be, pot them singly in small pots, and keep them growing in a gentle heat until the beginning of May, when, after gradually preparing them, they may be removed to the greenhouse, where they should be kept near the glass, and receive larger pots, as the old ones become filled with roots. The pyramidal form is that in which these plants are most generally grown, and it is one in which the beauty of the flowers are seen to the greatest advantage. To keep the plant in good form, the leading growth must be kept well up above the laterals, and the plant frequently turned round should it show any inclination to draw to one side; the lateral shoots must be pinched in order to keep a proper balance, and to form a dense and shapely pyramid. Thus grown, they form delightful objects in the conservatory or greenhouse, as well as for the hall or for vases—indeed, a Fuchsia, when well bloomed, either a large or small plant, is an ornament in any place. After blooming, if the old plants are to be kept for another season, place them as well as the young ones in the open air, in order to thoroughly ripen their wood, after which, and when frosts come on, remove them to some cool, dry place, such as a back shed, a cellar, or beneath the stage of the greenhouse, where they may remain until spring, and will require little or no water during the whole time. In spring, shake them out of the old soil, reduce the roots so that they may go into small pots, and prune the branches close in regular order; pot them into the soil before recommended, and start them in gentle heat. A gentle syringing will greatly assist the young shoots, but water should be given sparingly to the roots until they are quite active, when, about the middle of May, they should be again removed to the greenhouse. The green fly and red spider are the enemies of the Fuchsia, but with ordinary care in the use of the syringe, and light fumigations, these

may be easily prevented from working any serious mischief.

There are many of the original species which are perfect gems for the flower garden and mixed border, but which have been discarded because their flowers were small. We hope, however, and believe, from the way in which they are being inquired after, that their elegant forms will be soon again seen in our gardens in greater quantities than ever. They are principally natives of Chili, Peru, Mexico, and Brazil, at considerable elevations, and one or two come from the Antipodes.

Globe Amaranth (*Gomphrena globosa*).

This plant belongs to the *Amaranthaceæ*, and requires exactly the same treatment and soil as the Balsam and the Cockscomb. They grow from one to one and a-half feet high, flowering in July, and the flowers retain their beauty a long time after they have become dry. There are red, white, bronzy, and various other coloured varieties. Native of the East Indies.

Heliotrope (*Heliotropium peruvianum*).

This genus, which belongs to the *Ehretiaceæ*, delights in rich light soil, and comprises a quantity of stove and hardy annuals of little beauty. The Peruvian Heliotrope and its varieties, however, are very great favourites on account of the delicious perfume of the blossoms, which, on account of their fragrance and in reference to its peculiar aroma, has led to the plant being known most familiarly to many persons by the name of "Cherry Pie." For bouquet-making it is not

to be equalled, and a few plants should be in every greenhouse, while if planted in the open border, after all danger of frost is past, it will yield a quantity of flowers for cutting. The different coloured varieties are also largely used for bedding purposes. When pot specimens of these plants are required they should be frequently shifted, as they continue to grow and bloom during the whole summer. In winter they should be kept somewhat drier, and in the spring the ball should be reduced and the shoots slightly pruned. When grown against a wall of the conservatory or greenhouse, the plant is seldom out of flower at any time in the year, and is thus almost invaluable for yielding a supply of flowers for cutting. We have also seen it grown into standards with great advantage, as in this state it forms a fine object in the conservatory.

LANTANA.

A genus of Verbenaceous plants, producing an abundance of gay flowers, but having strongly scented foliage, the peculiar tone of which is not grateful to most people; hence they have been much neglected. They are usually considered stove plants, but they succeed very well in the greenhouse, where they should be kept partially dried during winter. We have seen many of them used for bedding purposes like Verbenas, and they succeed very well in favourable seasons. Lantanas are rapid growers, and will soon form large specimens; and, wherever space can be given, a few should be grown for the sake of their bright-coloured and abundant summer and autumn flowers. They should be potted in loam, peat, and sand, in equal parts. All the species are natives of the Western World, but the choicer ornamental kinds are mostly garden seedlings.

Mimulus.

To this genus, which derives its popular name of Monkey Flower from the peculiar gaping mouth of the flowers, belongs the common Musk, which is such a universal favourite. The large spotted-flowered sorts are very handsome, and if grown in a cool moist situation in rich strong loamy soil, they are very gay and attractive either as pot plants or border flowers. The species have been introduced from California, Chili, North America, &c., but the varieties and hybrids are by far the most attractive.

Pelargonium.

To this genus belongs the most popular flower of the day, better known, perhaps, by the name of *Geranium*. The varieties are legion. All of the beautiful forms we now have for the decoration of the flower-garden, the greenhouse, and the conservatory, in summer and in winter, are the results of continued cross-breeding for many years; and thus, from parents of inferior habit and with narrow thin-petaled flowers, we have varieties of a good shrubby branching style of growth, with flowers of rich colours, and of great substance, and having perfectly round smooth petals. Nor is this all, for we are still further progressing, so that the very leaves are made to assume the hues of flowers, constantly maintaining before our eyes a vivid picture, so that it becomes of little consequence whether the plant is in or out of flower. These plants should be grown in a mixture of rich loam, peat, and well-decomposed manure, in the proportion of half the first to one-fourth each of the latter, to which should be added sufficient white or river sand to make the whole gritty. To

obtain new varieties, seed must be sown about the first week in March in light soil, with a light covering only, and placed in gentle heat. The seeds will soon germinate, and should then be subjected to greenhouse temperature, with full exposure to the light; in this stage fierce sunshine must be excluded from them, and watering must be performed with great care to prevent them from damping off. When two or three leaves have been made, pot them singly into small pots, and keep them near the glass. As the pots become filled with roots they must be shifted into larger ones, and receive the same treatment as the other kinds. They should stand out-doors through the summer, in order to thoroughly ripen their wood, and ensure their flowering well the following spring. If sown as soon as the seed ripens in summer, they will flower at an earlier stage of growth, if kept fairly progressing through the winter months.

To increase the varieties already known, cuttings should be put in at any time from the beginning of July to the end of August, either in pots in the propagating house, in a cold frame, or even in the open ground. When they are rooted, they may be either potted singly, several in a pot, or if great quantities are required the cuttings should be put into long shallow boxes, properly drained, and in this way vast numbers of the Zonal section can be kept during the winter in a comparatively small space, and this economy of space may sometimes be of importance. The Zonal section contains many beautiful varieties which are unequalled for autumn and winter flowering, and which should be grown specially for this purpose.

Of the sections denominated "Show" and "Fancy" Pelargoniums, the earliest flowering plants should be pruned close down about the end of June or beginning of July, the succession plants about the middle of August.

For about a fortnight after this, little water must be given, beyond slight sprinklings with the syringe. When the buds begin to push, they should be taken out of the old soil, and then the roots should be reduced, and the plants repotted into smaller pots, using the compost previously recommended. Place them in a cold frame, where they should be kept close until the new roots begin to occupy the soil, when air should be admitted—at first gradually, afterwards more fully, but always so as to avoid cold rains. The plants first cut back will, under ordinary circumstances, have grown into nice bushes, and should be potted into their blooming-pots, and receive their last stopping about the last week in October, whilst the succession plants may remain to the end of December. If the plants are grown in a lean-to house they will require turning round frequently. Perfect light, abundance of air, and a temperature ranging between 40° and 45° during winter, are indispensable for the proper development of fine leaves and flowers.

Petunia.

A genus of *Solanaceæ*, which in the hands of the florist has been improved as much, or probably more, than any other which has been operated upon. Petunias are very gay flowers, the single ones being most effective as bedding plants, and the double forms making exquisite specimens for pot culture, supplying abundance of flowers for the decoration of the greenhouse, and for cutting for bouquets or dressing vases. There are a vast quantity of varieties in cultivation, which have sprung from the intermixture of the white-flowered *P. nyctaginiflora* and the rosy purple *P. violacea*. They should be grown in rich sandy loam, with

a little well-decomposed manure and good leaf mould added.

SCHIZANTHUS.

A genus of *Scrophulariaceæ*, containing many hardy annual species; but some few are greenhouse biennials, and to these very ornamental species we wish to draw attention. They are of branching habit, and form elegant pyramids, which are covered with their pretty and variously-coloured flowers. The soil best adapted for their culture is rich fibrous loam, a little peat, sand, and good rotten dung, being added. The seeds should be sown early in July, and the young plants must be kept in somewhat small pots until spring. Through the winter the plants require to be as near the glass as possible. They are natives of Chili.

VERBENA.

The members of this family are so familiar that any attempt at description is unnecessary. The genus comprises many species, both annual and perennial, tender and hardy, but it is the varieties which have sprung from the florist's hands, the offsprings of *V. chamædrifolia*, *V. teucrioides*, and their allies, which have become so popular, and are so well calculated to enliven our parterres with colours which cannot be obtained (at least, combined with the same close habit) in any other plants. Independently, however, of their utility for flower-garden purposes, and for supplying any quantity of blooms for bouquets, dressing vases, &c., some of the finest and largest varieties are superb objects when well grown as specimens in pots, for the summer and autumn decoration of the greenhouse or conservatory. New varieties may be obtained by sowing seed in spring in a gentle heat, but they

are perpetuated ordinarily by cuttings every year, young plants producing finer trusses of bloom than those kept through the winter. They thrive best in a rich loamy soil, and enjoy occasional applications of liquid manure. Green fly and mildew are the principal enemies of this family. The first must be kept away by frequent light fumigations with tobacco, while the mildew must be destroyed by dusting with flowers of sulphur, or it will soon destroy the beauty of the finest specimen.

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IMPORTANT NOTICE.

At the Meeting of the Royal Horticultural Society at Birmingham, June, 1872, the Prize (SILVER MEDAL) for the best LAWN MOWER was awarded to FOLLOWS & BATE. The Competition was very severe, Machines fitted with *every kind of driving power being tried*, and the importance of the trial may be estimated by the fact that, after the Medal was awarded, the Judges (three in number) obtained the services of a gentleman of great experience, to see if they would be justified in giving a Prize or Commendation to the next best Machine; but, after further tests, they decided that the simple mechanical arrangements and superior working powers of the "ANGLO-AMERICAN" placed it too far a-head of all competitors to allow of an award to any other. (The trials took place with 14-inch Machines.)

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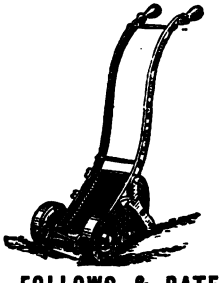

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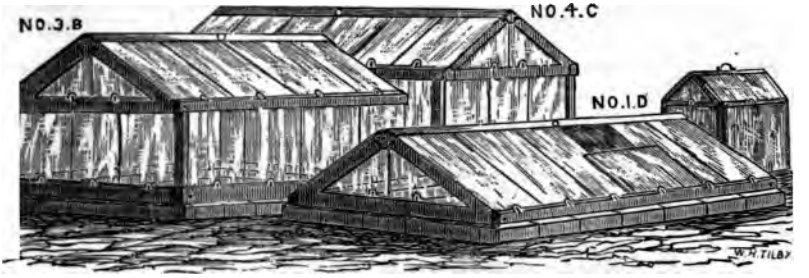

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The Ridge of the Frames rises 1 foot in all the lengths. For e. g. take No. 4, which has 2-feet glass sides, will be 3 feet high in the centre.	HEIGHT OF SIDE.	LENGTH OF FRAMES.							
		A		B		C		D	
	ft. in.	4 ft.		5 ft. 4 in.		6 ft. 8 in.		8 ft.	
	s. *d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
No. 1	0 3	12	6	15	6	18	0	20	0
No. 2 (glass sides)	1 0	20	0	24	6	28	0	31	6
No. 3 ditto	1 6	22	6	26	6	31	0	35	6
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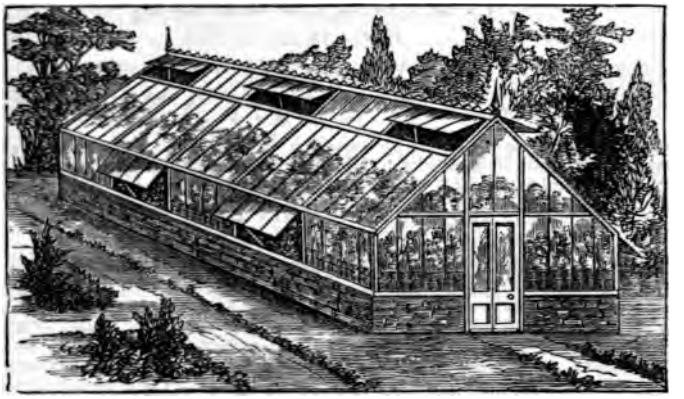

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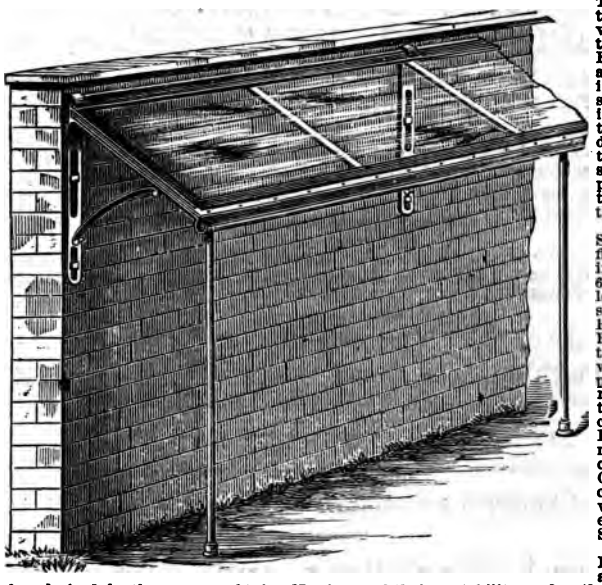

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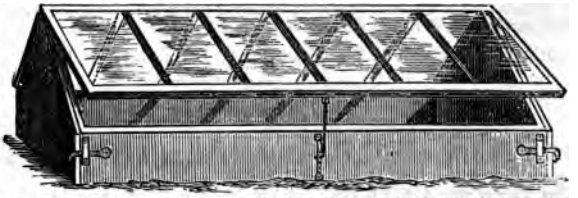

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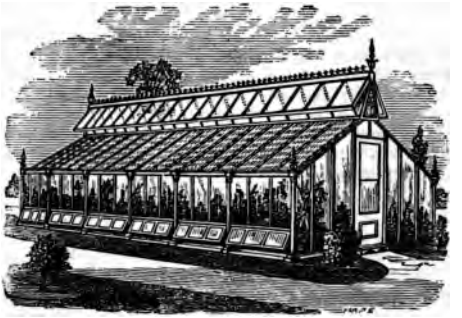

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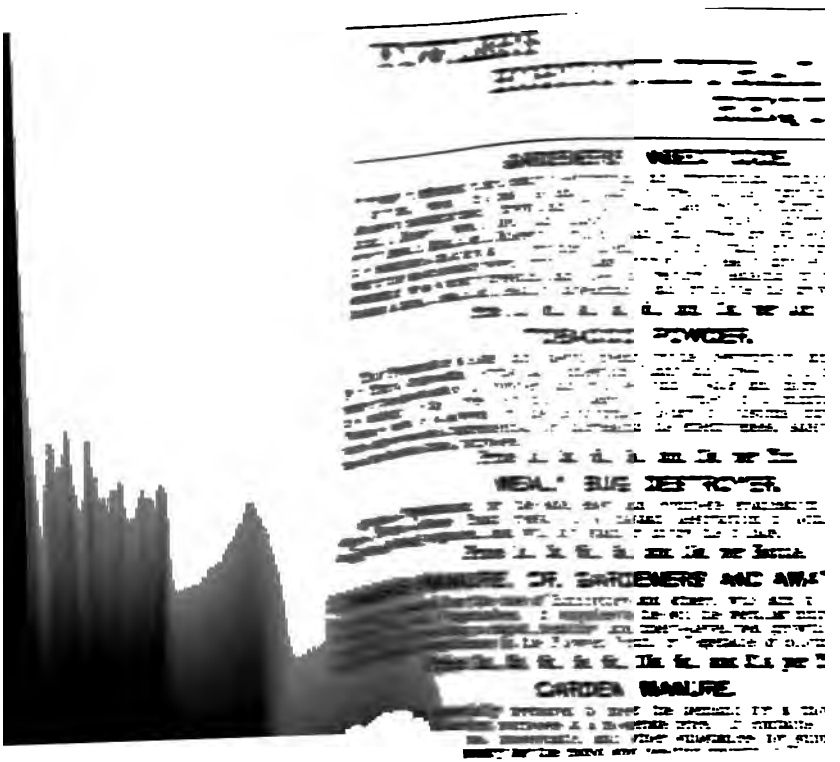

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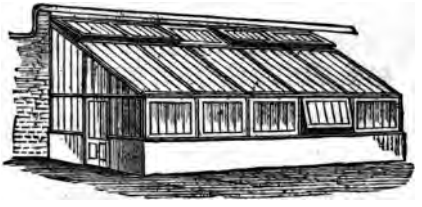

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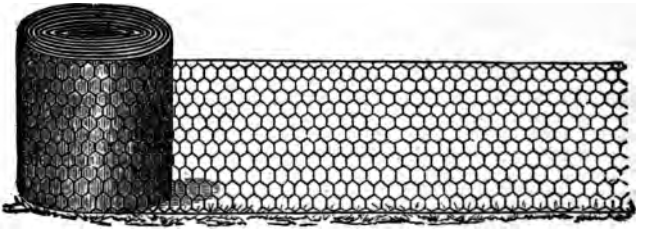

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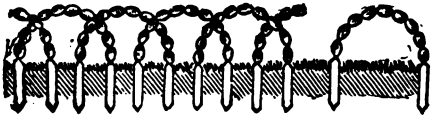

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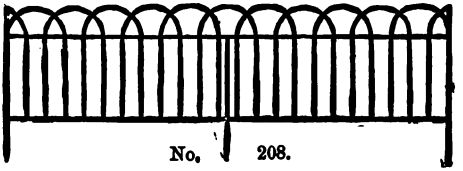

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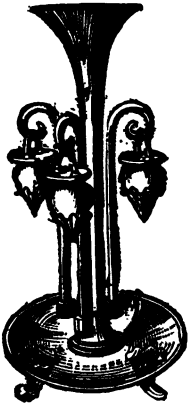

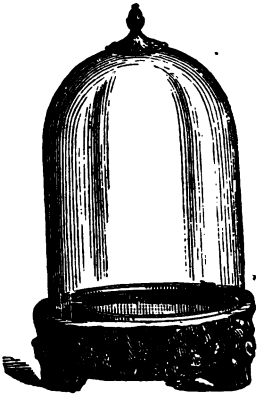

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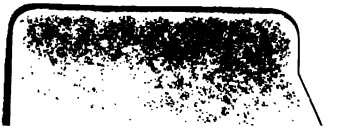
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